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3924 MEADE ST.
DENVER, COLORADO

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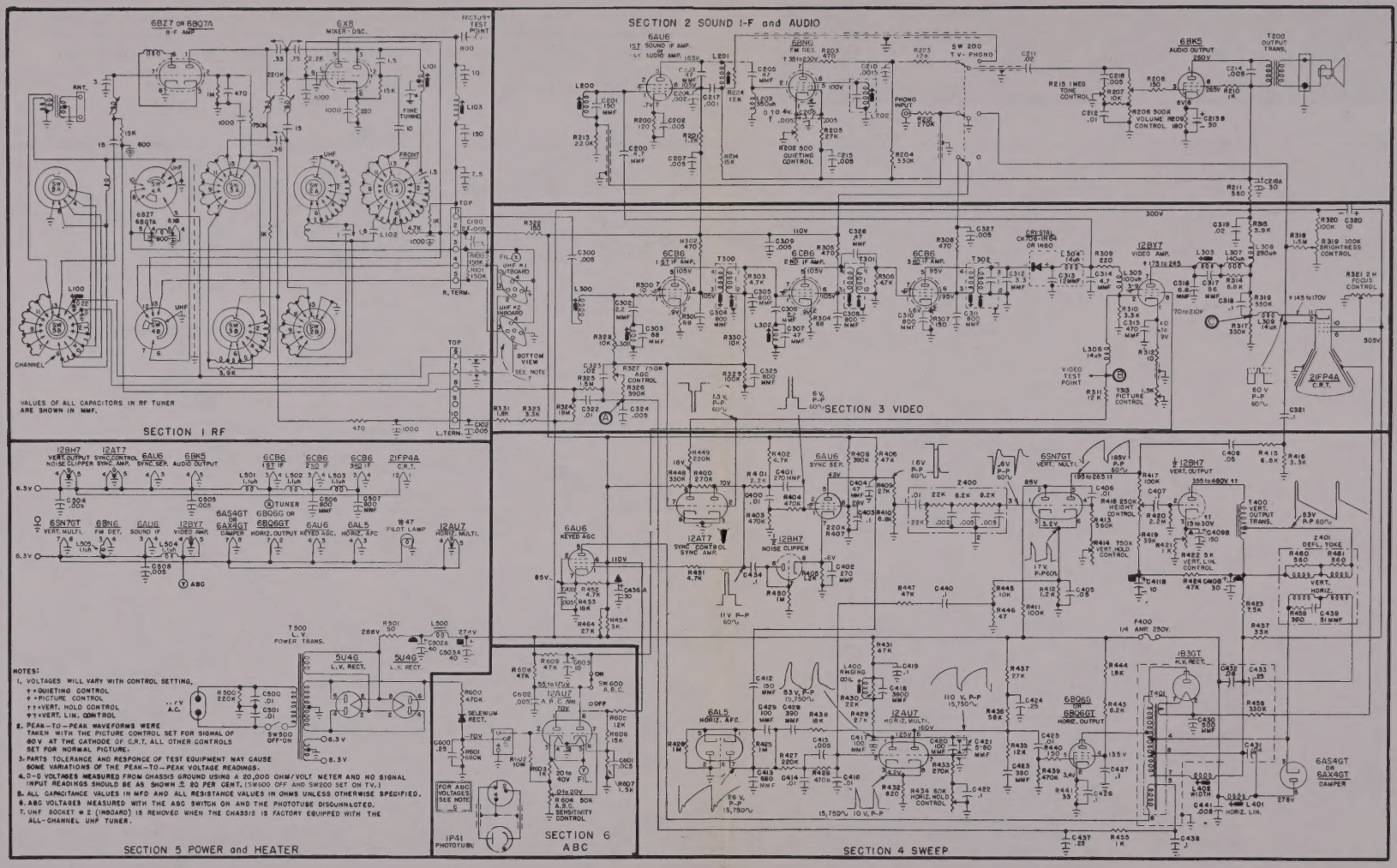

SECTION 1 RF
SECTION 2 SOUND I-F and AUDIO
SECTION 3 VIDEO
SECTION 4 SWEEP
SECTION 5 POWER and HEATER
SECTION 6 ABC
6BZ7 OR 6807A R-F AMP
6X8 MIXER-OSC.
6AU6 1ST SOUND IF AMP. OR 1ST AUDIO AMP.
6BN6 FM DET.
6BK5 AUDIO OUTPUT
6CB6 1ST IF AMP.
6CB6 2ND IF AMP.
6CB6 3RD IF AMP.
12BY7 VIDEO AMP.
21FP4A C.R.T.
12BH7 VERT. OUTPUT
12AT7 SYNC. CONTROL
6AU6 SYNC. SEP.
6BK5 AUDIO OUTPUT
6SN7GT VERT. MULTI.
6BN6 FM DET.
6AU6 SOUND IF
12BY7 VIDEO AMP.
6AS4GT OR 6AX4GT DAMPER
6BQ6GT OR 6CU6 HORIZ. OUTPUT
6AU6 KEYED AGC
6AL5 HORIZ. AFC
#47 PILOT LAMP
12AU7 HORIZ. MULTI.
6SN7GT VERT. OUTPUT
6AU6 KEYED AGC
12AT7 SYNC. CONTROL SYNC AMP.
12BH7 NOISE CLIPPER
6BQ6GT OR 6CU6 HORIZ. OUTPUT
6AL5 HORIZ. AFC
12AU7 HORIZ. MULTI.
6BQ6GT OR 6CU6 HORIZ. OUTPUT
6AS4GT OR 6AX4GT DAMPER
5U4G L.V. RECT.
5U4G L.V. RECT.
1P41 PHOTOTUBE
T500 L.V. POWER TRANS.
T200 OUTPUT TRANS.
T400 VERT. OUTPUT TRANS.
Z401 DEFL. YOKE
CHANNEL
ANT.
R-TERM.
L-TERM.
VALUES OF ALL CAPACITORS IN RF TUNER ARE SHOWN IN MMF.
NOTES:
1. VOLTAGES WILL VARY WITH CONTROL SETTING.
* = QUIETING CONTROL
# = PICTURE CONTROL
†† = VERT. HOLD CONTROL
‡‡ = VERT. LIN. CONTROL
2. PEAK-TO-PEAK WAVEFORMS WERE TAKEN WITH THE PICTURE CONTROL SET FOR SIGNAL OF 80 V AT THE CATHODE OF C.R.T. ALL OTHER CONTROLS SET FOR NORMAL PICTURE.
3. PARTS TOLERANCE AND RESPONCE OF TEST EQUIPMENT MAY CAUSE SOME VARIATIONS OF THE PEAK-TO-PEAK VOLTAGE READINGS.
4. D-C VOLTAGES MEASURED FROM CHASSIS GROUND USING A 20,000 OHM/VOLT METER AND NO SIGNAL INPUT READINGS SHOULD BE AS SHOWN ± 20 PER CENT. (SW600 OFF AND SW200 SET ON TV.)
5. ALL CAPACITANCE VALUES IN MFD AND ALL RESISTANCE VALUES IN OHMS UNLESS OTHERWISE SPECIFIED.
6. AGC VOLTAGES MEASURED WITH THE AGC SWITCH ON AND THE PHOTOTUBE DISCONNECTED.
7. UHF SOCKET # 2 (INBOARD) IS REMOVED WHEN THE CHASSIS IS FACTORY EQUIPPED WITH THE ALL-CHANNEL UHF TUNER.

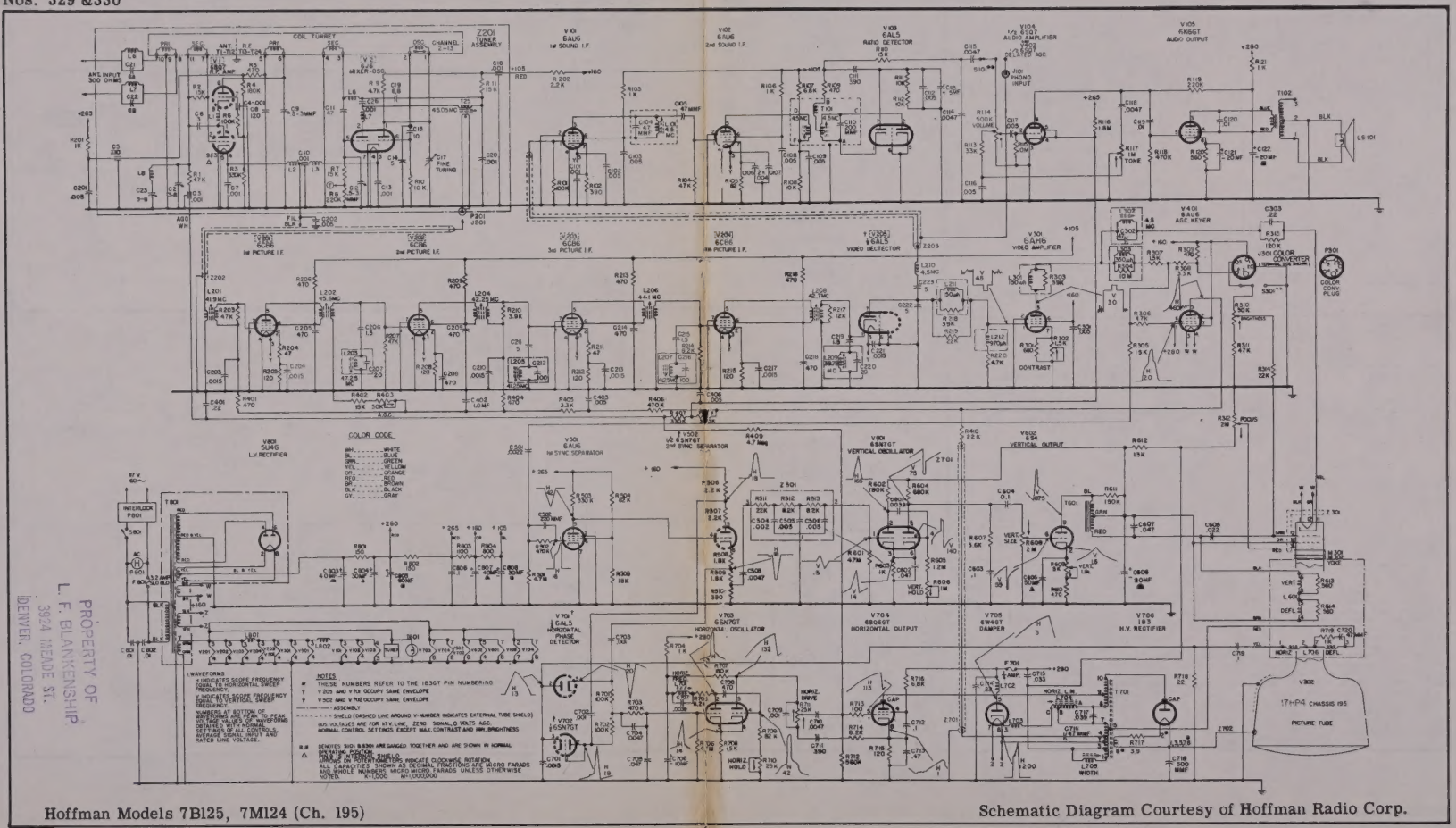
Westinghouse Models H-782K21, H-783K21, H-784K21, H-785K21, H-791K21, H-792K21 (Ch. V-2247-1)

Schematic Diagram Courtesy of Westinghouse Electric Corp.

The PHOTOFACT Servicer

Vol. 33 ★ Published for all users of Howard W. Sams' Photofact Folders ★ Sept. 1, 1956
Nos. 329 &330

The service information in this Servicer provides data on models which we have been unable to present in PHOTOFACT Folders. The receivers are not in current production; a requirement for PHOTOFACT coverage, and we are therefore presenting schematics and supplementary data that will be of assistance when servicing these models.



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Hoffman Models 7B125, 7M124 (Ch. 195)

Schematic Diagram Courtesy of Hoffman Radio Corp.

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 8 IN SET 312

Motorola Chassis TS-534, Y, YB were covered in Photofact Folder 8 – Set 312.

Late in production many new models and late production changes were added.

Following is a complete list of all models and the chassis used in each.

MODEL	CHASSIS	MODEL	CHASSIS
Y21K37B	TS-534Y	21K37B	TS-534
Y21K37BA	TS-534Y	21K37BA	TS-534
Y21K37BR	TS-534Y	21K37BR	TS-534
Y21K37BRA	TS-534Y	21K37BRA	TS-534
Y21K39	TS-534Y	21K39	TS-534
Y21K39B	TS-534Y	21K39B	TS-534
Y21K40	TS-534Y	21K40	TS-534
Y21K40B	TS-534Y	21K40B	TS-534
Y21K47B	WTS-534Y	21K47B	WTS-534
Y21K47M	WTS-534Y	21K47M	WTS-534
Y21K48B	TS-534Y	21K48B	TS-534
Y21K48M	TS-534Y	21K48M	TS-534
Y21K51B	TS-534Y	21K51B	TS-534
Y21K51M	TS-534Y	21K51M	TS-534
Y21T26B	TS-534Y	21T26B	TS-534
Y21T26BA	TS-534Y	21T26BA	TS-534
Y21T26BR	TS-534Y	21T26BR	TS-534
Y21T26BRA	TS-534Y	21T26BRA	TS-534
Y21T26CH	TS-534YB	21T26CH	TS-534
Y21T26CHA	TS-534Y	21T26CHA	TS-534
Y21T27B	TS-534Y	21T27B	TS-534
Y21T27MA	TS-534Y	21T27MA	TS-534
Y21T27PK	TS-534Y	21T27PK	TS-534
Y21T28	TS-534Y	21T28	TS-534
Y21T28B	TS-534Y	21T28B	TS-534
Y21T29B	TS-534Y	21T29B	TS-534
Y21T29M	TS-534Y	21T29M	TS-534
Y21T31B	VTS-534Y	21T31B	VTS-534
Y21T31M	VTS-534Y	21T31M	VTS-534
Y24K9	TS-534Y	24K9	TS-534
Y24K9B	TS-534Y	24K9B	TS-534
Y24T3BR	TS-534Y	24T3BR	TS-534

MOTOROLA CHASSIS TS-534, TS-534Y, TS-534YB, VTS-534, VTS-534Y, WTS-534, WTS-534Y

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PRODUCTION CHANGES
BULLETIN 166

PRODUCTION CHANGES
BULLETIN 166

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Ch. TS-534D-11	TO PREVENT TUBE BREAKDOWN In chassis TS-534C-00, R38 and R42 are increased from 220Ω to 6.8KΩ, 2 watts. In chassis TS-534D-11, R38 and R42 are increased from 6.8KΩ to 8.2KΩ, 3 watt glass resistors.
Ch. TS-534D-12	TO PROVIDE AN EXTERNAL TEST POINT C86 is changed from a disc capacitor to a feed thru capacitor.
Ch. TS-534D-12-0	COMPONENT CHANGE R115 is increased from 680Ω to 1KΩ.
Ch. TS-534D-12-1	COMPONENT CHANGE L44 (ratio detector) is changed to part #24K735697. R76 is decreased from 220Ω to 120Ω.
Ch. TS-534D-13	UHF TUNER CHANGE The UHF tuner is changed to part #PTT-37B.
Ch. TS-534D-14	TO IMPROVE PICTURE QUALITY In chassis TS-534D-00, C48 is increased from 1MMF to 2.2MMF. In chassis TS-534D-14, C48 is increased from 2.2MMF to 2.7MMF. The iron core of L27 (41.25MC trap) is changed to part #76A738121.
Ch. TS-534D-15	TO PROVIDE VOLTAGE SAFETY FACTOR C4A is decreased from a 20MFD @ 150V to 10MFD @ 400V.
Ch. TS-534E-00	TO REDUCE HUM A 470Ω resistor is added between pin 6 of V20 and the junction of C2 and C6. TO ELIMINATE HORIZONTAL PULL C102 and C103 are changed to a tolerance of 10%.
Ch. TS-534E-01	TO REDUCE EFFECTS OF PICTURE TUBE CATHODE TO GRID LEAKAGE R63 is decreased from 2.2Meg to 470KΩ. C72 is increased from .05MFD to .1MFD.
Ch. TS-534E-02	TO PROTECT VIDEO DETECTOR CRYSTAL A 68KΩ resistor and a .005MFD capacitor (wired in parallel) are added between pin 2 of V7 and the junction of L35 and L36. Some chassis incorporating this change were coded E-00-1.
Ch. TS-534E-03	COMPONENT CHANGE C104 is changed in voltage rating from .001MFD @ 1000V to .001MFD @ 2000V. Some chassis incorporating this change were coded E-02-1.
Ch. TS-534E-04	COMPONENT CHANGE A 33KΩ resistor is added between pin 10 of V20 and terminal 2 of T3. A 100KΩ or 39KΩ resistor was used in some sets, however a 33KΩ resistor is the recommended replacement.
Ch. TS-534E-05	TO REDUCE FILAMENT VOLTAGE ON 1B3 R118 is increased from 4.7Ω to 5.6Ω.
Ch. TS-534E-05-1	COMPONENT CHANGE The vertical hold control (R2) is replaced by a 2Meg control (part #18K739260). With this new control a 680KΩ resistor is added from the junction of R93, C98, R2 and T2 to the center arm of R2. A 330KΩ resistor is added from the center arm of R2 to ground. When replacing the vertical hold control (R2) replace with part #18K737346 and omit the resistors added above.

Ch. TS-534YH	**COMPONENT CHANGE** R35 is increased from 2.7KΩ to 3.9KΩ. **UHF TUNER CHANGE** The UHF tuner is changed to part #TT-81. **VHF TUNER CHANGE** The VHF tuner is changed to part #RTT-80. The RTT-80 is electrically identical to TT-80, except the UHF tuner mounting brackets and UHF belt drive pulley are changed (part #49B737478).

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 7 IN SET 317

MAGNAVOX CHASSIS CMUA465BB, CMUA466BB, CMUA469BB, CMUA473BB, CMUA474BB, CMUA478BB, CMUA482BB, CMUA483BB, CMUA485BB, CMUB470BB, CMUD471BB, CMUD486BB, CMUE472BB, CMUE484BB, CTA465BB, CTA466BB, CTA469BB, CTA473BB, CTA474BB, CTA478BB, CTA482BB, CTA483BB, CTA485BB, CTB470BB, CTD471BB, CTD486BB, CTE472BB, CTE484BB

Magnavox Chassis CMUA465AA, CMUA466AA, CMUA469AA, CMUA473AA, CMUA474AA, CMUB470AA, CMUD471AA, CMUE472AA, CTA465AA, CTA466AA, CTA469AA, CTA473AA, CTA474AA, CTB470AA, CTD471AA, CTE472AA (650 Series) were covered in Photofact Folder 7 — Set 317.

Chassis CMUA465BB, CMUA466BB, CMUA469BB, CMUA473BB, CMUA474BB, CMUA478BB, CMUA482BB, CMUA483BB, CMUA485BB, CMUB470BB, CMUD471BB, CMUD486BB, CMUE472BB, CMUE484BB, CTA465BB, CTA466BB, CTA469BB, CTA473BB, CTA474BB, CTA478BB, CTA482BB, CTA483BB, CTA485BB, CTB470BB, CTD471BB, CTD486BB, CTE472BB, CTE484BB (650 Series) are electrically identical to the chassis covered except for the following changes.

NEW IF TUBES

The 1st. and 2nd. video IF tubes (V3 and V4) have been changed from 6CB6 to 6BZ6.

COMPONENT CHANGES

An 800MMF capacitor is added from pin 6 of V3 to ground.

C35 is increased from 680MMF to .01MFD.

C34 is increased from 680MMF to 800MMF.

R39 is omitted.

R41 is decreased from 39Ω to 18Ω.

R45 is omitted.

A 4.5MC trap is added from pin 11 of V20 to L28.

C43 is decreased from 5000MMF to 3900MMF.

R34 is increased from 10KΩ to 33KΩ.

CMUA465BB, CMUA466BB, CMUA469BB, CMUA473BB, CMUA474BB, CMUA478BB, CMUA482BB, CMUA483BB, CMUA485BB, CTA465BB, CTA466BB, CTA469BB, CTA473BB, CTA474BB, CTA478BB, CTA482BB, CTA483BB, CTA485BB

COMPONENT CHANGES

The following changes in Video IF Coil part numbers are made.

L23 (1st. Video IF) part #360636-1.

L24 (2nd. Video IF) part #360637-1.

L25 (3rd. Video IF) part #360638-1.

R27 is decreased from 10KΩ to 6.8KΩ.

R30 is decreased from 15KΩ to 12KΩ.

R34 is decreased from 10KΩ to 8.2KΩ 5%.

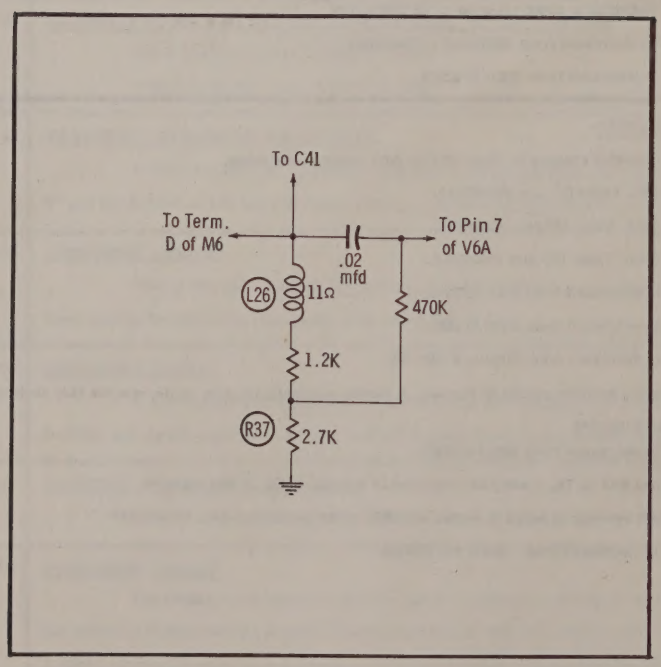
The video detector circuit is revised. A partial schematic is given on the reverse side showing the new circuit arrangement.

R40 is decreased from 22KΩ to 12KΩ.

R43 and R44 (4.7K, 1 watt) are replaced by a single 5.6K, 2 watt resistor.

A 68KΩ resistor is added in series with R38 to the junction of R42, C1 and R43.

C37 is increased from .1MFD to .47MFD.


To C41
To Term.
D of M6
To Pin 7
of V6A
.02
mfd
L26
11Ω
470K
1.2K
R37
2.7K

ADMIRAL
CHASSIS 20Y4H, HF & Radio (Chassis 3D1B, C)

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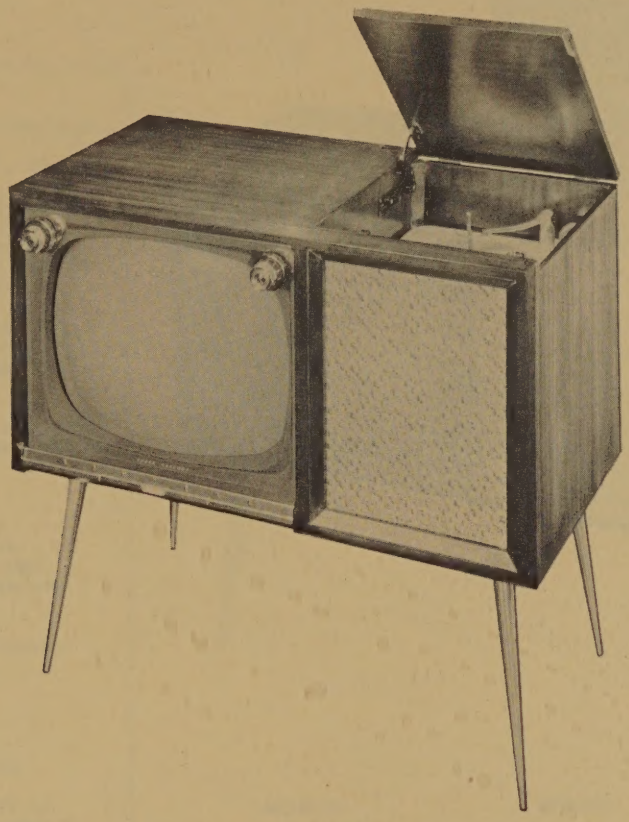
Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



ADMIRAL MODEL L23B6 (Ch.20Y4HF)

TRADE NAME	Admiral Models L23B6, L23B7 (Ch. 20Y4H, 20Y4HF), Radio Chassis 3D1B or 3D1C
MANUFACTURER	Admiral Corp., 3800 W. Cortland St., Chicago 47, Illinois
TYPE SET	TV-Radio-Phono Combination Receiver
TUBES	(TV) Twenty (Radio) Three
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING 1.52 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 25.75MC, Sound IF 21.25MC (Intercarrier) AM Radio 535-1620KC, AM IF 455KC

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RECORD CHANGER - ADMIRAL MODEL 654

ADMIRAL
CHASSIS 20Y4H, HF & Radio (Chassis 3D1B, C)

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DISASSEMBLY INSTRUCTIONS

TV CHASSIS REMOVAL

1. Remove 4 push-on type control knobs from front panel of cabinet.
2. Remove 10 wood screws and 2 metal screws. Remove rear cover.
3. Remove 2 wood screws holding AC interlock bracket and 2 wood screws holding antenna terminal bracket.
4. Disconnect radio-phono power plug, speaker plug, audio plug, dial light plug, on/off volume and contrast control plug, front panel control plug, yoke plug, HV lead and picture tube socket.
5. Remove ion trap and centering magnet assembly.
6. Remove wind nut holding yoke and remove yoke.
7. Remove 3 bolts holding tuner assembly bracket to cabinet top.
8. Remove 4 chassis bolts. Remove chassis.
9. Remove 2 wood screws holding control panel assembly to cabinet, also unclip on/off volume and contrast control assembly from inside cabinet front.

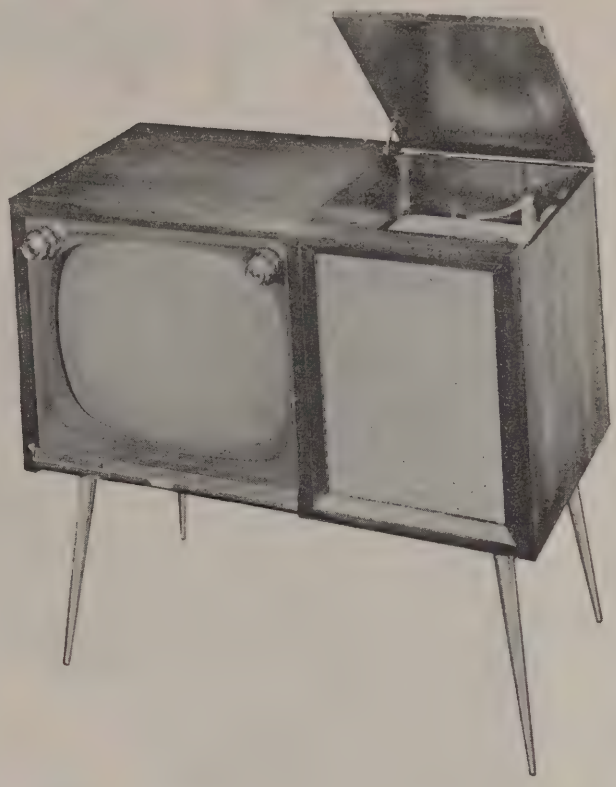
RADIO CHASSIS REMOVAL

1. Remove 10 wood screws. Remove rear cover.
2. Remove radio-phono power plug and audio plug.
3. Remove phono motor plug, phono input plug and 2 radio antenna plugs.
4. Remove 4 push-on type control knobs.
5. Remove 7 wood screws holding chassis to cabinet. Remove chassis.

SPEAKER REMOVAL

1. Disconnect plug from TV chassis.
2. Remove 8 speaker nuts. Remove 2 speakers.

NOTE: If it is necessary to remove TV chassis for servicing it is also necessary to remove the speakers. The audio output transformers is mounted on one of the speakers and must be connected for proper operation.



MODELS	CHASSIS
L23B6, L23B7	2DY4H, 20Y4HF Radio Ch.3D1B or 3D1C

ADMIRAL
CHASSIS 20Y4H, HF & Radio (Chassis 3D1B, C)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, thru the small hole in the cabinet to the left of the channel selector shaft.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 4 push-on type control knobs from front panel of cabinet. Remove 4 wood screws holding metal strip at the top edge of the safety glass. Remove metal strip and safety glass. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

SPECIAL ADJUSTMENTS

Noise Gate Adjustment

In normal signal areas the noise gate control (R5) will usually be in the fully counter clockwise position. In weak signal and high noise level areas, adjust for minimum snow in picture. This position will usually be fully clockwise.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit may be made by adjusting the flexible shaft at the back of the set. Adjust the horizontal adjustment slug (L22) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate "Sound IF Detector Buzz" adjust the ratio detector secondary (L18) located on rear of the chassis.

FUSES

One fuse is used for LV power supply protection .(For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

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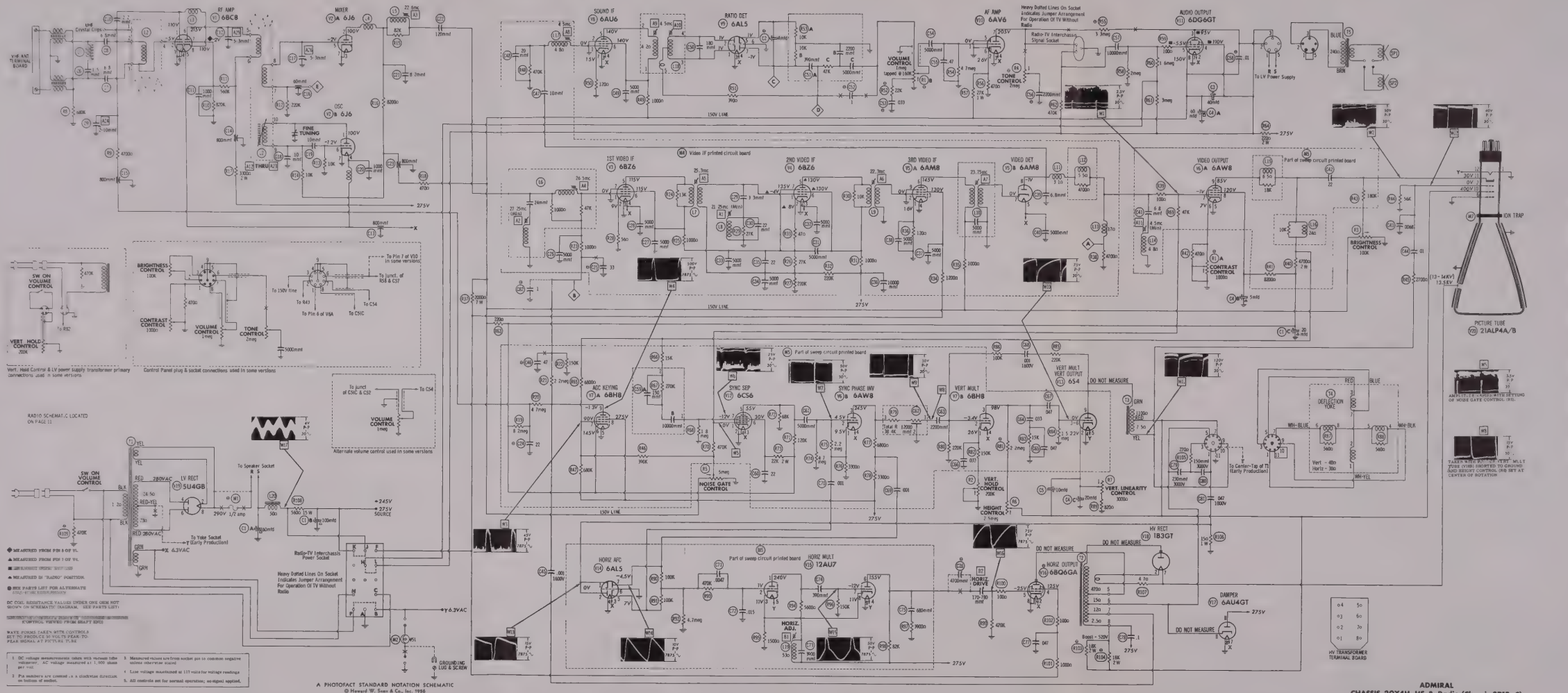
ADMIRAL
CHASSIS 20Y4H, HF & Radio (Chassis 3D1B, C)
RF AMP V1 6BC8
MIXER V2A 6J6
OSC V2B 6J6
SOUND IF V8 6AU6
RATIO DET V9 6AL5
AF AMP V10 6AV6
AUDIO OUTPUT V11 6DG6GT
1ST VIDEO IF V1 6BZ6
2ND VIDEO IF V4 6BZ6
3RD VIDEO IF V5A 6AM8
VIDEO DET V5B 6AM8
VIDEO OUTPUT V6A 6AW8
ACC KEYING V7A 6BH8
SYNC SEP V12 6CS6
SYNC PHASE INV V6B 6AW8
VERT MULT V7B 6BH8
VERT MULT VERT OUTPUT V13 6S4
HORIZ AFC V10 6AL5
HORIZ MULT V13 12AU7
HORIZ OUTPUT V16 6BQ6GA
HV RECT V18 1B3GT
DAMPER V17 6AU4GT
LV RECT V19 5U4GB
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ION TRAP
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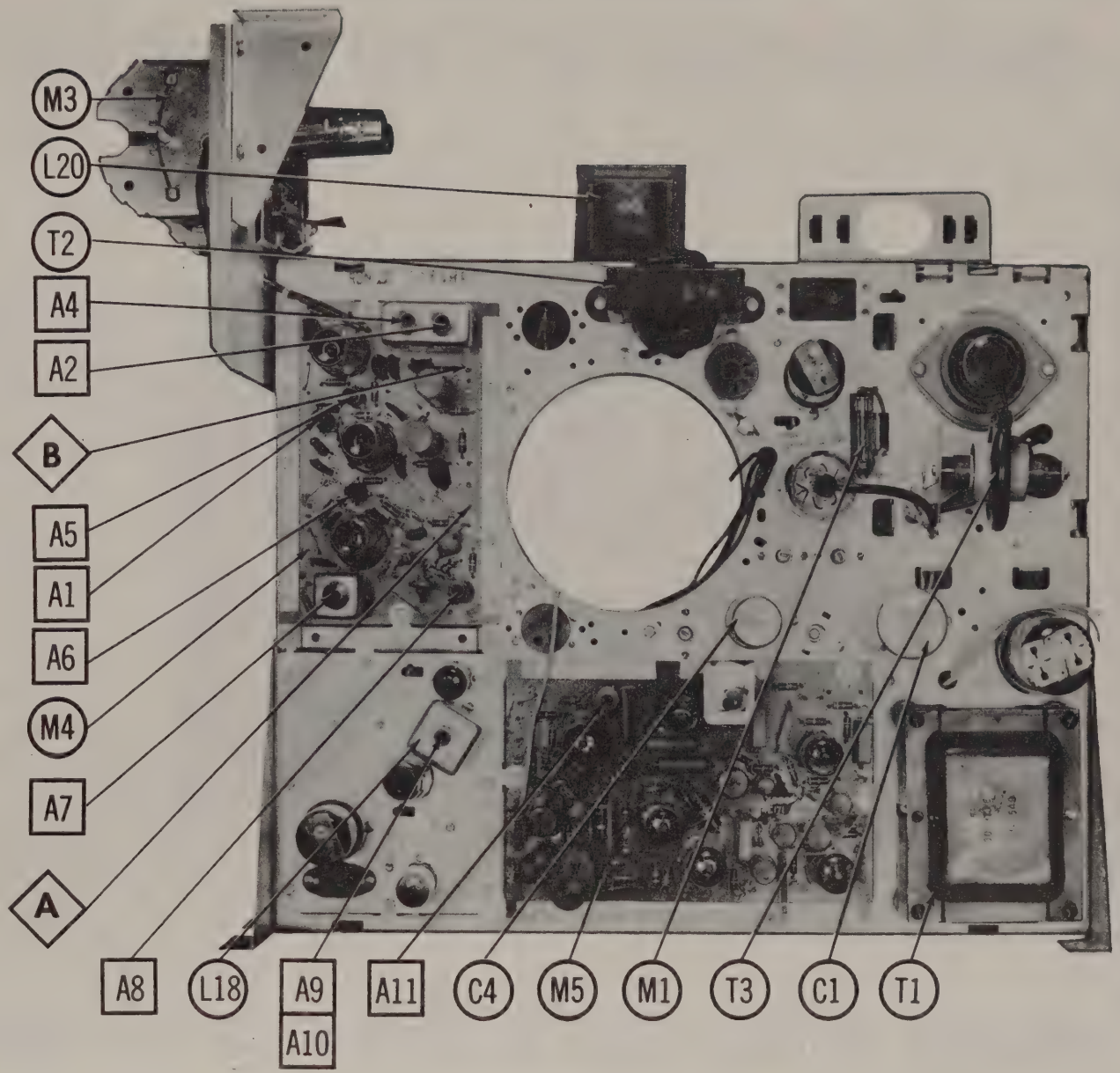
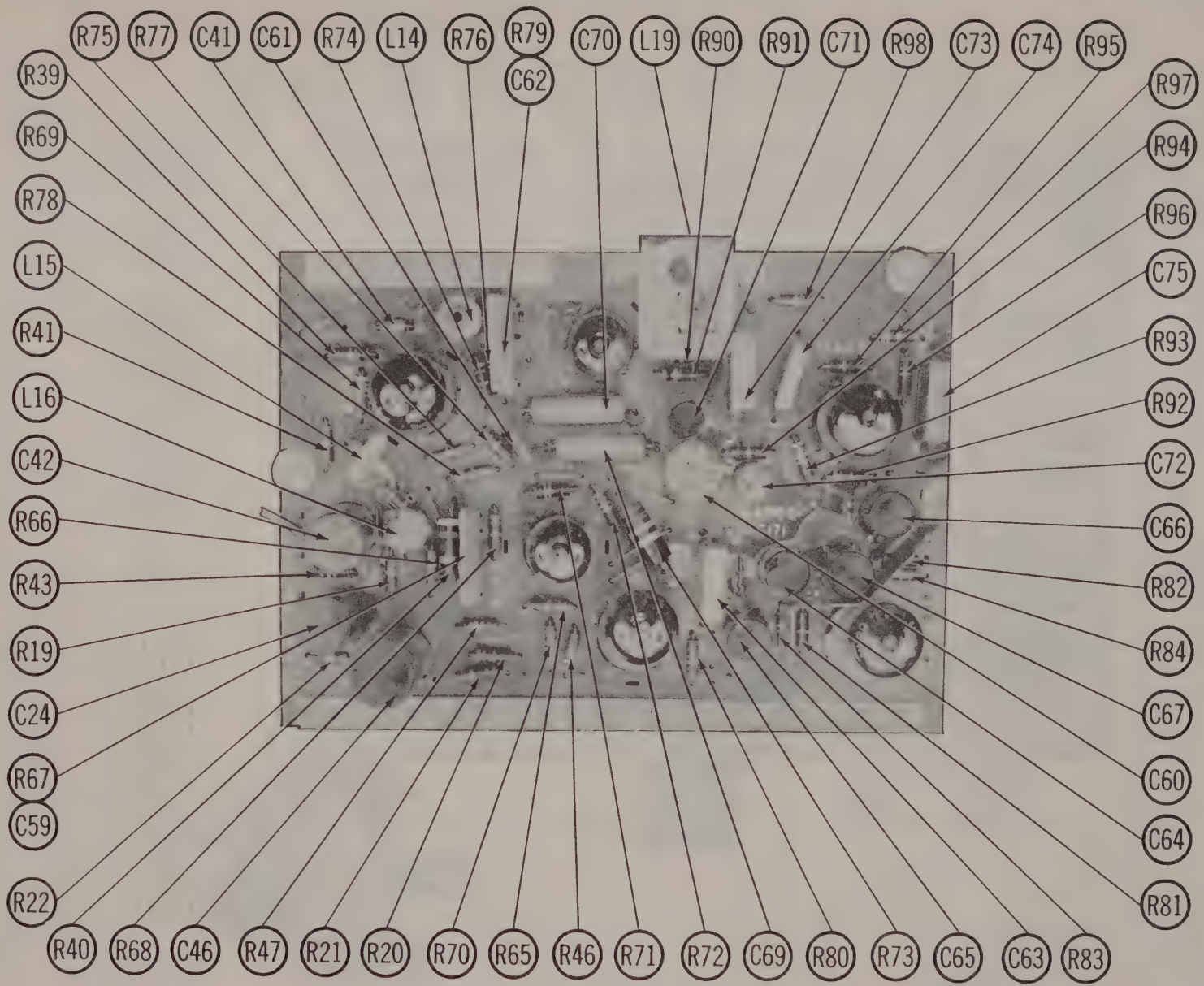
VERT. LINEARITY CONTROL
VERT. HOLD CONTROL
HEIGHT CONTROL
HORIZ. ADJ.
CONTRAST CONTROL
BRIGHTNESS CONTROL
VOLUME CONTROL
TONE CONTROL
SW ON VOLUME CONTROL
NOISE GATE CONTROL
VERT. HOLD CONTROL 350K
CONTRAST CONTROL 100K
VOLUME CONTROL 1meg
TONE CONTROL 2meg
BRIGHTNESS CONTROL 100K
VOLUME CONTROL 1meg
Vert. Hold Control & LV power supply transformer primary connections used in some versions
Control Panel plug & socket connections used in some versions
Alternate volume control used in some versions
RADIO SCHEMATIC LOCATED ON PAGE 11
To Speaker Socket
To Yoke Socket (Early Production)
Radio-TV Interchassis Power Socket
Heavy Dotted Lines On Socket Indicates Jumper Arrangement For Operation Of TV Without Radio
Radio-TV Interchassis Signal Socket
To LV Power Supply
To Center-Tap of T1 (Early Production)
To Pin 7 of V10 in some versions
To junct. of R58 & C37
To 150V line
To R43
To Pin 6 of V9A
To C54
To C51C
To junct of C51C & C52
To C54
Video IF printed circuit board
Part of sweep circuit printed board
150V LINE
275V
245V
6.3VAC
DO NOT MEASURE
GROUNDING LUG & SCREW
HV TRANSFORMER TERMINAL BOARD
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1956
ADMIRAL
CHASSIS 20Y4H, HF & Radio (Chassis 3D1B, C)

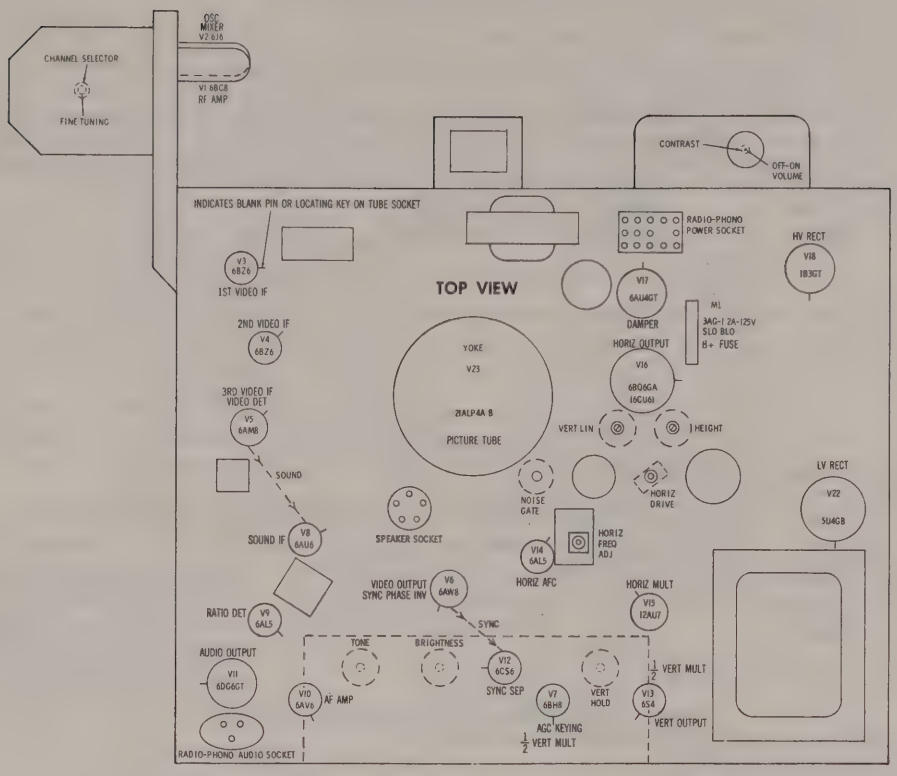


TV CHASSIS TOP VIEW



SYNC CIRCUIT SUB-CHASSIS

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V19, Fuse (M1 *)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V11
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V6, V7, V20
Has pic, no sound - V8, V9, V10, V11
Overloaded picture - V7

SYNC FAILURE
No vert. sync - V6, V7, V13
No horiz. sync - V6, V14, V15
No vert. or horiz. sync - V6, V12

SWEEP FAILURE
No raster, has sound - V15, V16, V17, V18, V20
No vertical deflection - V7, V13
Poor vert. linearity or foldover - V7, V13
Poor horiz. linearity or foldover - V15, V16, V17
Narrow picture - V15, V16, V17, V18, V19
Vert. off freq. - V6 , V7, V13
Horiz. off freq. - V6, V14, V15

* Not used in early versions.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped away from the chassis.

VIDEO IF ALIGNMENT

Remove the Mixer-osc. tube (V2) from its socket and replace with a 6J6 having pin 1 removed.
Disconnect the antenna leads and connect a short jumper lead across the antenna terminals.
Set the contrast control fully counter clockwise.
Connect the negative lead of a 3 volt bias battery to ungrounded side of C25.
Connect positive to chassis.
For steps 1 and 2 use a strong signal from the signal generator but for all other steps use only enough generator output to provide usable indication on VTVM. Use lowest scale on VTVM.
Allow 15 to 20 minutes for test equipment warm-up period.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over dummy converter tube. Low side to chassis.	21.25MC	Any unused high band channel	DC probe thru decoupling network (Fig. 1) to point Ⓐ. Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	"	"	27.25MC	"	"	A2	"
3.	"	"	22.6MC	"	"	A3	Adjust for maximum deflection.
4.	"	"	26.5MC	"	"	A4	"
5.	"	"	25.3MC	"	"	A5	"
6.	"	"	22.3MC	"	"	A6	"
7.	"	"	23.75MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Leave bias connected as under "Video IF Alignment".
Use only enough sweep generator output to provide usable pattern on scope.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to ungrounded tube shield floating over dummy converter tube. Low side to chassis.	23.0MC (10MC Swp.)	21.25MC 22MC 23MC 25MC 25.75MC	Any unused high band channel	Vert. amp. thru decoupling network (Fig. 1) to point Ⓐ. Low side to chassis.		Check for response similar to Fig. 2. If necessary, retouch A1 thru A7 to obtain desired response. Adjust A4 and A5 for position of 25.75MC marker and amplitude of response curve on high frequency side. Adjust A3 and A6 for position of 22MC and 23MC markers and amplitude of response curve on low frequency side.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Disconnect antenna and short antenna terminals together with a short clip lead.
Set contrast control for minimum contrast.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	.01MFD	High side to pin 8 (plate) of 6AM8 (V5). Low side to chassis.	4.5MC	Any non-interfering channel	DC probe to point Ⓒ. Common to chassis.	A8, A9	Attenuate generator output to maintain 1 volt at VTVM. Adjust for maximum deflection.
10.	"	"	"	"	DC probe to point Ⓓ. Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.01MFD	High side to pin 8 (plate) of 6AM8 (V5). Low side to chassis.	4.5MC (450KC Swp.)	4.5MC	Any	Vert. amp. to point Ⓒ. Low side to chassis.	A8, A9	Disconnect stabilizing capacitor (C2). Adjust for curve of maximum amplitude and symmetry similar to Fig. 3.
10.	"	"	"	"	"	Vert. amp. to point Ⓓ. Low side to chassis.	A10	Reconnect C2. Adjust A10 so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

SOUND IF ALIGNMENT USING ON THE AIR SIGNAL

Remove the bias and replace the original converter tube in its socket. Tune in a TV station. Adjust A8 and A9 for maximum deflection with the VTVM connected as in step 9 of "Sound IF Alignment Using AM Signal Generator and VTVM". Adjust A10 for best program sound with minimum buzz. This point will be found between two maximum buzz peaks.

4.5MC TRAP ALIGNMENT

Short L12 with a short jumper wire.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	.01MFD	High side to pin 8 (plate) of 6AM8 (V5). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point Ⓒ. Common to chassis.	A11	Adjust for MINIMUM deflection.

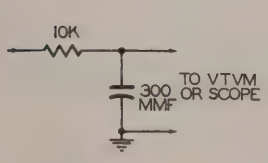


FIG. 1

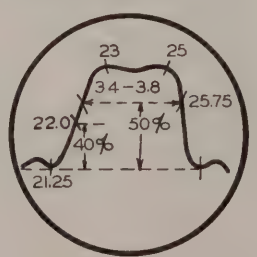


FIG. 2

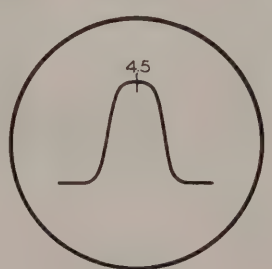


FIG. 3

ALIGNMENT INSTRUCTIONS (cont)

ALTERNATE 4.5MC TRAP ALIGNMENT

Tune in a TV station and adjust A11 for minimum 4.5MC beat interference in picture.

OSCILLATOR ALIGNMENT

Replace the original oscillator tube in its socket. The channel oscillator adjustment screws are reached through a hole to the left of the channel switch shaft. The correct adjustment screws are accessible through this hole as the channel switch is turned to each channel.
Leave the bias connected as under "Video IF Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp.)	211. 25MC 215. 75MC	13	Vert. amp. thru 47K to point (A). Low side to chassis.	A12	Adjust to place sound marker in trap notch as in Fig. 5. Video markershould fall at 50%.
			207MC (10MC Swp.)	205. 25MC 209. 75MC	12		A13	
			201MC (10MC Swp.)	199. 25MC 203. 75MC	11		A14	
			195MC (10MC Swp.)	193. 25MC 197. 75MC	10		A15	
			189MC (10MC Swp.)	187. 25MC 191. 75MC	9		A16	
			183MC (10MC Swp.)	181. 25MC 185. 75MC	8		A17	
			177MC (10MC Swp.)	175. 25MC 179. 75MC	7		A18	
			85MC (10MC Swp.)	83. 25MC 87. 75MC	6		A19	
			79MC (10MC Swp.)	77. 25MC 81. 75MC	5		A20	
			69MC (10MC Swp.)	67. 25MC 71. 75MC	4		A21	
			63MC (10MC Swp.)	61. 25MC 65. 75MC	3		A22	
			57MC (10MC Swp.)	55. 25MC 59. 75MC	2		A23	

RF AND MIXER ALIGNMENT

Leave bias connected as under "Video IF Alignment". The bias may be removed if it is difficult to obtain a response of sufficient amplitude. If bias is removed, short to chassis point where the bias was connected.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp.)	205. 25MC 209. 75MC	12	Vert. amp. thru 10K to point (E). Low side to chassis.	A24, A25, A26	Adjust for response curve similar to Fig. 6 with markers above 90%.
14.	"	"	213MC (10MC Swp.)	211. 25MC 215. 75MC	13	"		Check for response similar to Fig. 6. If markers fall below 70% on any channel, make compromise adjustments of A24, A25, and A26 with channel switch set to that channel. Check all other channels to see that they have not been seriously affected.
			201MC (10MC Swp.)	199. 25MC 203. 75MC	11			
			195MC (10MC Swp.)	193. 25MC 197. 75MC	10			
			189MC (10MC Swp.)	187. 25MC 191. 75MC	9			
			183MC (10MC Swp.)	181. 25MC 185. 75MC	8			
			177MC (10MC Swp.)	175. 25MC 179. 75MC	7			
			85MC (10MC Swp.)	83. 25MC 87. 75MC	6			
			79MC (10MC Swp.)	77. 25MC 81. 75MC	5			
			69MC (10MC Swp.)	67. 25MC 71. 75MC	4			
			63MC (10MC Swp.)	61. 25MC 65. 75MC	3			
			57MC (10MC Swp.)	55. 25MC 59. 75MC	2			

RADIO ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
15.	.1MFD	High side to antenna lug on tuning gang.	455KC	Radio	Tuning gang fully open	Across Voice Coil	A27, A28, A29, A30	Adjust for maximum deflection.
16.	"	"	1620KC	"	"	"	A31	"
17.	"	"	1400KC	"	Tune to 1400KC signal	"	A32	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

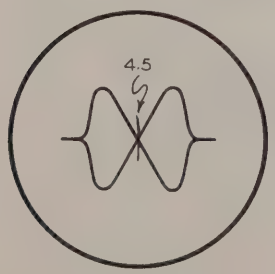


FIG. 4

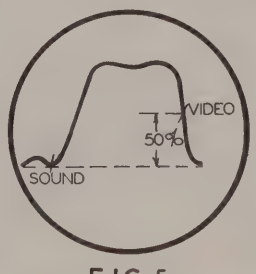


FIG. 5

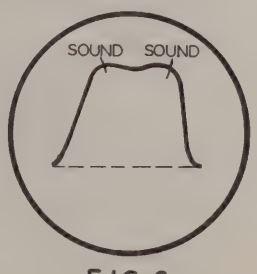


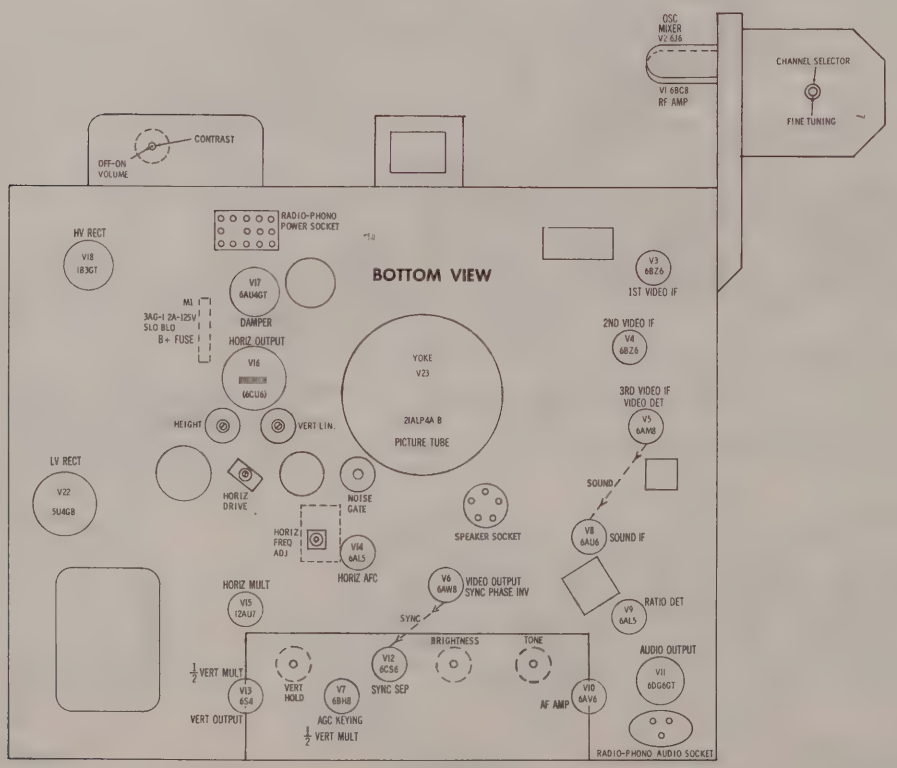
FIG. 6

RESISTANCE MEASUREMENTS

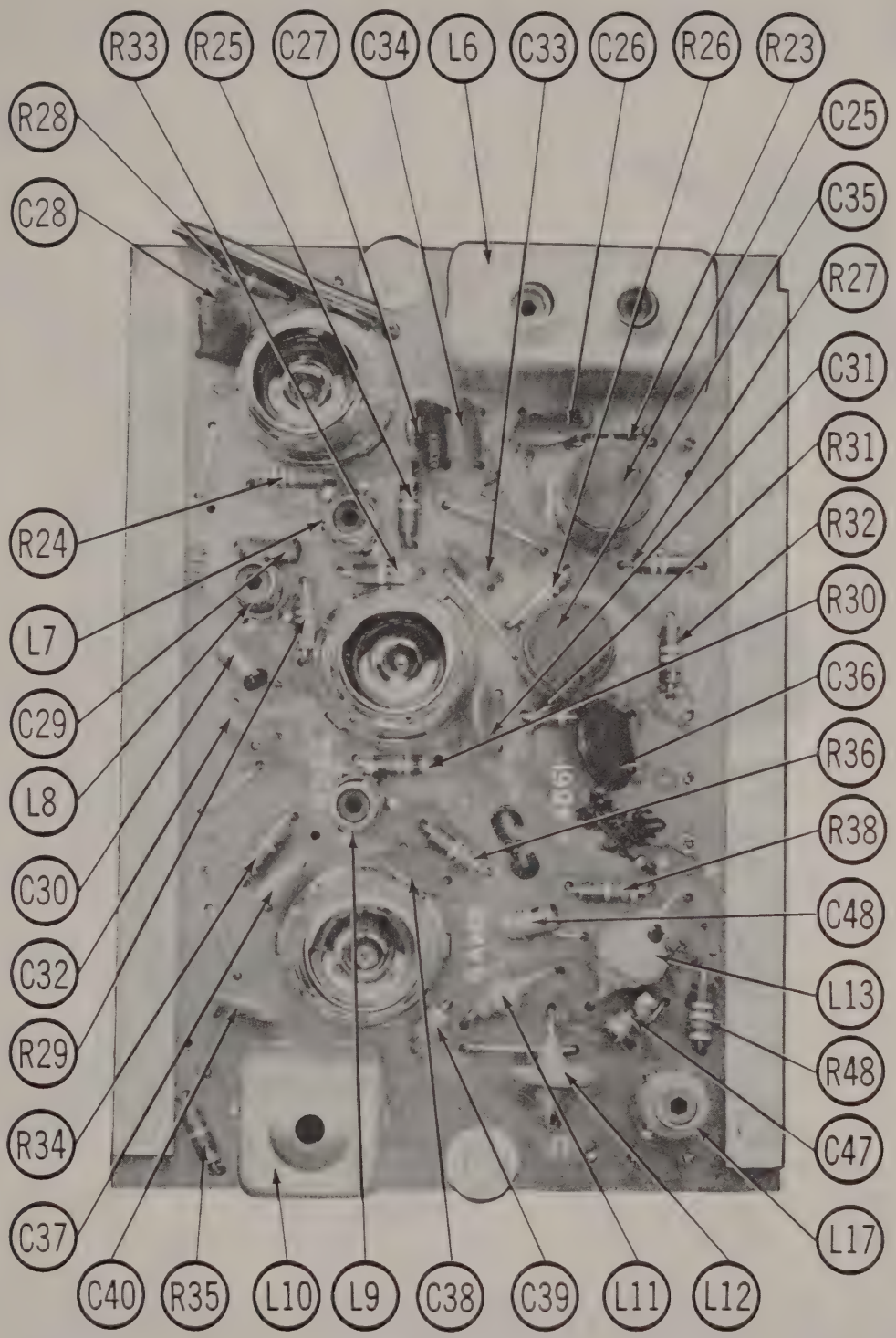
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BC8	INF.	3.5Meg	0Ω	0Ω	.1Ω	†3300Ω	350K	INF.	0Ω
V2	6J6	■10K	■8500Ω	0Ω	.1Ω	220K	10K	0Ω		
V3	6BZ6	150K	56Ω	0Ω	.1Ω	▲1000Ω	▲1000Ω	0Ω		
V4	6BZ6	100K	▲47Ω	.1Ω	0Ω	†1000	†1000Ω	130K		
V5	6AM8	120Ω	.4Ω	■3200Ω	0Ω	.1Ω	■1000Ω	.3Ω	4700Ω	0Ω
V6	6AW8	3300Ω	1.5Meg	†10K	.1Ω	0Ω	●45Ω	4800Ω	■8500Ω	■5000Ω
V7	6BH8	●250K	220K	●*3Meg	.1Ω	0Ω	■220Ω	■12K	†50Ω	1.8Meg
V8	6AU6	470K	0Ω	0Ω	.1Ω	■1K	■1K	120Ω		
V9	6AL5	INF.	INF.	0Ω	.1Ω	10K	0Ω	10K		
V10	6AV6	4.7Meg	470Ω	0Ω	.1Ω	0Ω	0Ω	†400K		
V11	6DG6GT	TP	.1Ω	†500Ω	†300Ω	850K	TP	0Ω	15K	
V12	6CS6	50K	0Ω	.1Ω	0Ω	■50K	■22K	1.8Meg		
V13	6S4	NC	●1400Ω	1.5Meg	0Ω	.1Ω	1.5Meg	NC	NC	*10K
V14	6AL5	15Ω	15Ω	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V15	12AU7	†5600Ω	5Meg	1500Ω	.1Ω	.1Ω	†82K	150K	1500Ω	0Ω
V16	6BQ6GA	TP	.1Ω	TP	■3000Ω	470K	TP	0Ω	0Ω	TOP CAP *15Ω
V17	6AU4GT	NC	TP	300K	NC	†50Ω	TP	.1Ω	0Ω	
V18	1B3GT		PINS	1-8	HAVE	INF.	RESISTANCE			TOP CAP *485Ω
V19	5U4GB	TP	80K	NC	25Ω	NC	23Ω	NC	80K	
V20	21ALP4A	0Ω	56K	PIN 6 0Ω	PIN 8 9000Ω	PIN 11 ■180K	PIN 12 .1Ω			

● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
TP TIE POINT.
NC NO CONNECTION.

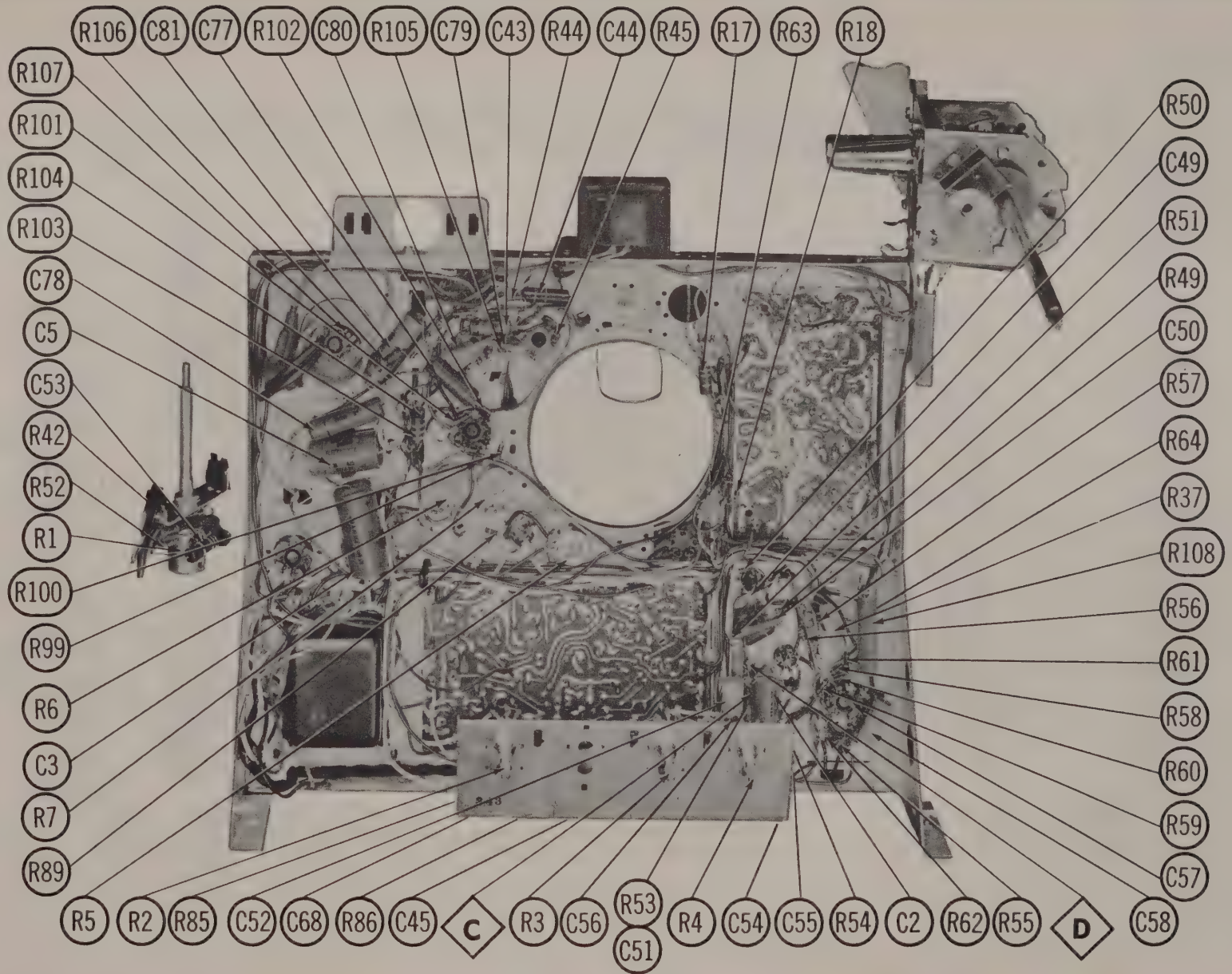
† MEASURED FROM PIN 8 OF V19.
▲ MEASURED FROM PIN 7 OF V4.
■ MEASURED FROM 150V LINE.
* MEASURED FROM PIN 3 OF V17.



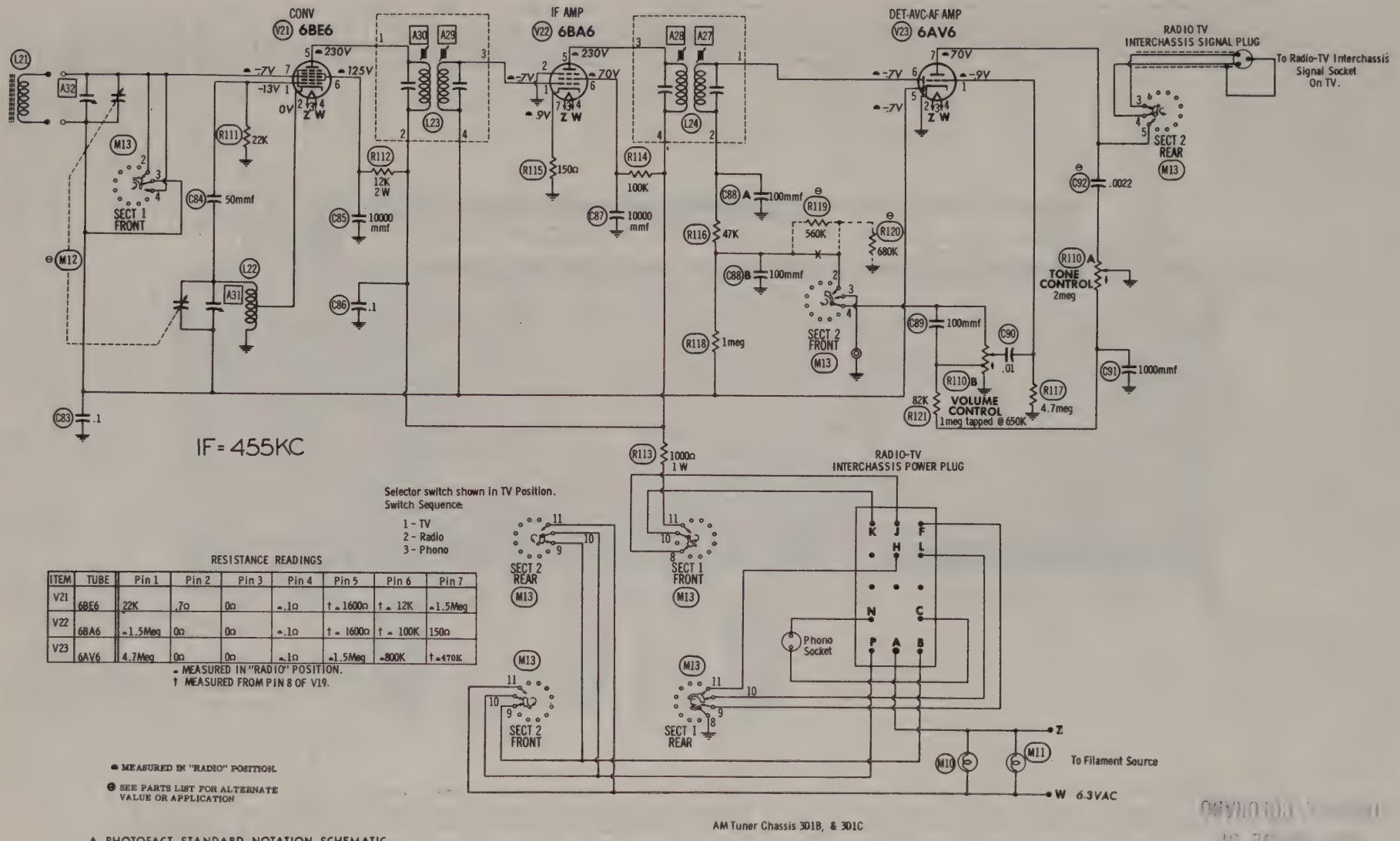
TUBE PLACEMENT CHART



VIDEO IF SUB-CHASSIS



TV CHASSIS BOTTOM VIEW



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V21	6BE6	22K	7Ω	0Ω	≈.1Ω	†≈1600Ω	†≈ 12K	≈1.5Meg
V22	6BA6	≈1.5Meg	0Ω	0Ω	≈.1Ω	†≈ 1600Ω	†≈ 100K	150Ω
V23	6AV6	4.7Meg	0Ω	0Ω	≈.1Ω	≈1.5Meg	≈800K	†≈470K

≈ MEASURED IN "RADIO" POSITION.
† MEASURED FROM PIN 8 OF V19.

● MEASURED IN "RADIO" POSITION.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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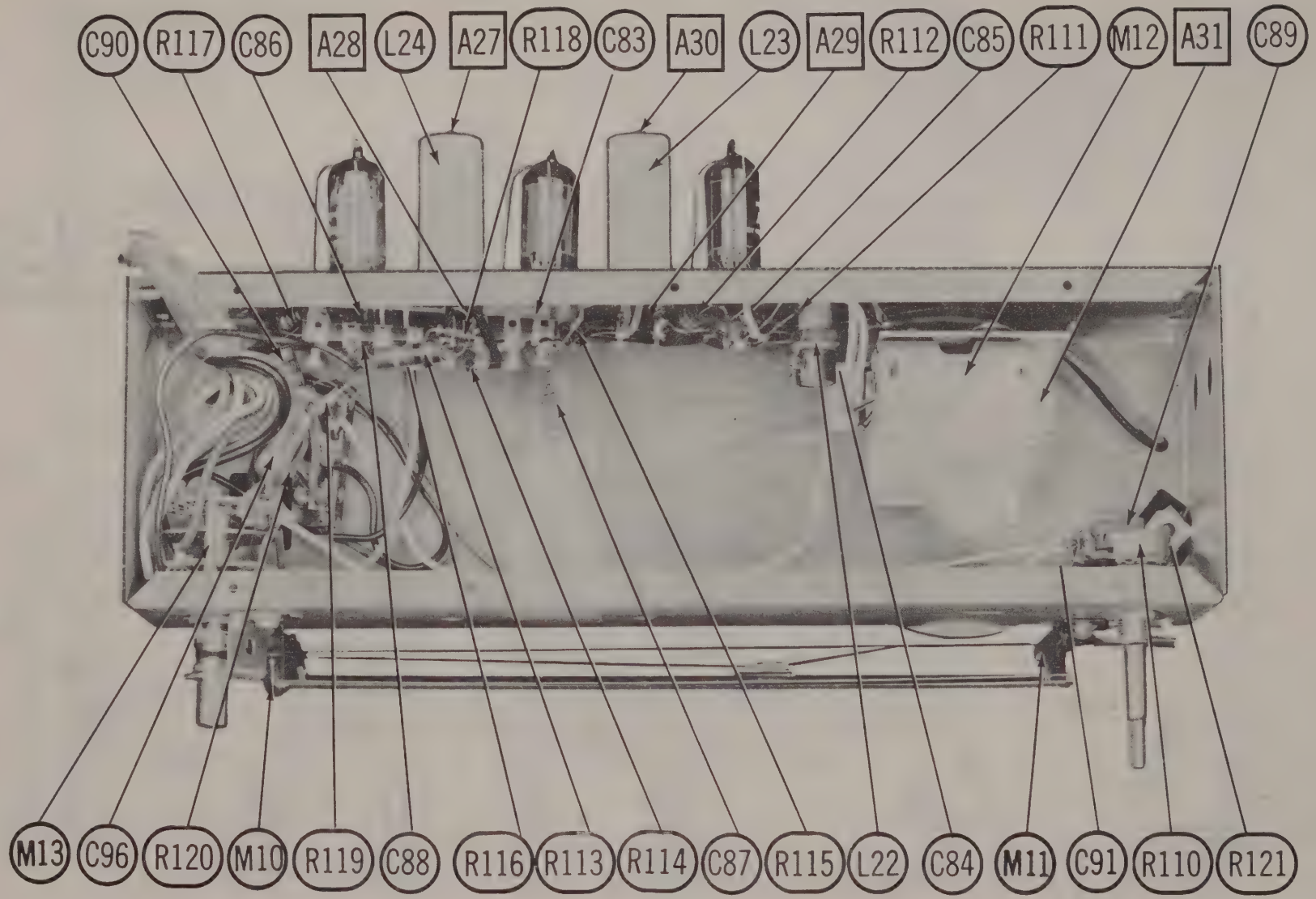
AM Tuner Chassis 301B, & 301C

RADIO SCHEMATIC

CHASSIS 20Y4H, HF & Radio (Chassis 3D1B, C)

ADMIRAL



RADIO CHASSIS

TV PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6BC8	
V2	Mixer-Oscillator	6J6	
V3	1st. Video IF Amplifier	6BZ6	
V4	2nd. Video IF Amplifier	6BZ6	
V5	3rd. Video IF Amplifier-Video Detector	6AM8	
V6	Video Output-Sync Phase Inverter	6AW8	
V7	AGC Keying-Vert. Mult.	6BH8	
V8	Sound IF Amplifier	6AU6	
V9	Ratio Detector	6AL5	
V10	AF Amplifier	6AV6	
V11	Audio Output	6DG6GT	
V12	Sync Separator	6CS6	
V13	Vert. Mult.-Vert. Output	6S4	
V14	Horiz. AFC	6AL5	
V15	Horiz. Mult.	12AU7	
V16	Horiz. Output	6BQ6GA	Note 1
V17	Damper	6AU4GT	
V18	HV Rectifier	1B3GT	
V19	LV Rectifier	5U4GB	

Note 1. 6CU6 may be used in some versions.

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	ADMIRAL PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V20	21ALP4A/B ①	21ALP4A ① 21ALP4B ① 21ALP4	21ALP4A/B ① 21ALP4A ①	21ALP4A/B ②	① Aluminized ② Silver screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	ADMIRAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■60	350	67D15-105	E4C632		FP255	TMT-193	T-180	R2056 *
B	▬100	350				TC68	TD-60-350	MTD-4520	
C	▲20	200							
C2	4	50	67A4-9 (Note 1)	SRE50V5	BR550	TC30	TD-4-50	MMT-0505	TVA-1303
C3	40	300	67A4-19	PRS350V40	BR4035	TC78	TD-40-350	FM-4540	TVA-1611
C4A	■60	200	67D15-109			FP330.3	TMT-172	T-395	R1652 *
B	▲5	200				TC59		MT-4504	
C	20	50							
C5	10	475	67A4-22	PRS500V10	BR1250	TC82	TD-10-475	MT-4710	TVA-1802

Note 1. Chassis 20Y4H, Run 1, uses Mfgr's part #67B27-3.
* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C6	1.5		95D46-84	NP0-S11.5	TCZ-1R5	Z004	NP0A-1R5	ZT-5515	5TCCB-V15	
C7	6.8		94D47-53	NP0-D16.8	TCZ-6R8	Z013	NP0A-6R8	ZT-5568	5TCCB-V68	
C8	6.8		94D47-53	NP0-D16.8	TCZ-6R8	Z013	NP0A-6R8	ZT-5568	5TCCB-V68	
C9	2-10	**	94D92-71		829-10					
C10	2.2		94C37-97	NP0-S12.2	TCZ-2R2	Z006	NP0A-2R2		5TCCB-V22	
C11	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D5	
C13	.5-3		98A45-23		829-3		3139-01-0R5	CT565A		
C13	800		94C37-90							
C14	800									
C15	800									
C16	60		94D92-76							
C17	.5-3		98A45-23		829-3		3139-01-0R5	CT565A		
C18	10									
C19	10									
C20	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C21	8.2		94D92-74	NP0-D18.2		Z016	NP0A-8R2			
C22	120		65C6-66	DD-00012	DD-121	G044	811-121		5TCC-T12	
C23	800		94C37-90							
C24	.22	200	64B16-51					PT4022	2SE-P22	Note 2
C25	.33	200							2SE-P33	Notes 3, 4
C26	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C27	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C28	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C29	3.3		65C6-89	NP0-SI3.3	TCZ-3R3	TZ06	NP0A-3R3	ZT-5533	5TCCB-V33	
C30	22		65C6-113	NP0-SI22	TCZ-22	TZ14	NP0K-220		5TCC-Q22	
C31	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C32	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C33	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C34	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C35	.22	200	64B16-51					PTS4022	2SE-P22	
C36	10000		65C43-2	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C37	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C38	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C39	6.8		65B28-068	NP0-SI6.8	TCZ-6R8	TZ08	NP0A-6R8	ZT-5568	5TCCB-V68	
C40	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C41	6.8		65B28-068	NP0-SI6.8	TCZ-6R8	TZ08	NP0A-6R8	ZT-5568	5TCCB-V68	
C42	.22	400	64B16-28					PTS4022	2SE-P22	
C43	.0068	600	64B9-14	BPD-0068	D6-682	CUB6D68	GP2-333-682	PT6268	6TM-D68	
C44	.01	600	64B9-13	BPD-01	D6-103	CUB6S1	GP3-333-103	PT611	6TM-S1	
C45	.001	1600	64A2-28	HVD-30-1000	DD30-102	CUB16D1	3KV-102	PT1621	16TM-D1	
C46	.47	200	64B16-49						2SE-P47	Note 4
C47	10		65C6-44	NP0-SI10	TCZ-10	TZ09	NP0A-100	ZT-541	5TCC-Q1	
C48	20		65C6-51	NP0-SI20	TCZ-20	TZ13	NP0K-200	ZT-542	5TCC-Q2	
C49	5000		65D10-5	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C50	180		65D10-52							
C51A	390				D6-391	G058	811-391	UC-5339	5GA-T39	
B	2200		†63B6-15	†PA-445	D6-222	K073	811-0022	UC-5222	5GA-D22	
C	5000				D6-502	K080	811-005	UC-525	5GA-D5	
C52	.1	200		P288N-1	DF-104	CUB2P1		PT401	2TM-P1	Note 5
C53	.033	400		BPD-03	DF-303	CUB6S33		PT4133	4TM-S33	Note 5
C54	5000		65D10-5	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C55	47		65C6-4	SI47	D6-470	TP29	GP1K-470	UC-5447	5GA-Q47	
C56	2200			BPD-0022	D6-222	K073	811-0022	DC-522	5GA-D22	Notes 5, 6
C57	10000		64B16-36	BPD-01	DD-103	K080	811-01	DC-511	5HK-S1	
C58	.01	600	65D10-3	BPD-01	D6-103	CUB6S1	GP3-333-103	PT611	6TM-S1	Note 7

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C59A	150		♦63C9-3	♦PA-459	♦PC-184	G046	811-151	UC-5315	5GA-T15	
B	10000					K082	811-01	DC-511	5HK-S1	
								PTS4022	2SE-P22	
C60	.22	200	64B16-51							
C61	5000		65C43-1	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C62	12000		‡63C9-1	‡PA-502	‡PC-104				‡103C12	
C63	2200	500	65B21-222	1464-0022		1R5D22			MS-222	
C64	.033	600	64B15-10							
C65	.047	400	64B16-32					PTS4147	4SE-S47	
C66	.033	400	64B15-10						4SE-S33	
C67	.047	600	64B16-9						6SE-S47	
C68	.001	1600	64A2-28	HVD-30-1000	DD30-102	CUB16D1	3KV-102	PT1621	6TM-D1	
C69	.001	400	64B21-1	BPD-001	D6-102	CUB6D1	GP2L-102	PT621	6TM-D1	
C70	.001	400	64B21-1	BPD-001	D6-102	CUB6D1	GP2L-102	PT621	6TM-D1	
C71	.0047	400	64B16-38	BPD-0047	DD-472	K079	811-0047	PTS4247	4SE-D47	
C72	.015	200	64B16-58	BPD-015	DD16-153		821-015		2SE-S15	
C73	3900	500	65B21-392	1464-0039		1R5D39			MS-239	
C74	390	500	65B21-391		D6-391	5R5T39	811-391		MS-339	
C75	680	500	65B21-681	1464-00068	D6-681	1R5T68	811-681		MS-368	
C76	4700			BPD-0047	DD-472	K079	811-0047	DC-525	5HK-D47	
C77	.047	600	64B9-9	BPD-05	DF-503	CUB6S47		PT6147	6TM-S47	
C78	.1	600	64B9-7	P688N-1	DF-104	CUB6P1		PT601	6TM-P1	
C79	230	3000	65D10-69							
C80	150	3000	65D10-68							
C81	.047	1000	64A2-30	P1088N-047		CUB16S5		PT1615	10TM-S47	
C82	.1	100	64A10-3	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	Note 4

† Items C51A, C51B, C51C, R53A, R53B and R53C are combined in one unit.
♦ Items C59A, C59B and R67 are combined in one unit.
‡ Items C62, R79A and R79B are combined in one unit.
Note 2. Some versions use .1MFD unit (part #64B16-53) in this application.
Note 3. Some versions use .47MFD unit (part #64B16-49) in this application.
Note 4. Items C25 and C46 replaced with C82 in late versions.
Note 5. Not used in some versions.
Note 6. C56 may be 5000MMF or 1500MMF.
Note 7. Some versions may use 5000MMF in this application.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ADMIRAL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1000Ω	½	75B11-29	F1-5	RTV-583		UF13R	Contrast -Note 1 (Panel)
B	1Meg	½		R2-61			UR16-T1253	Volume tapped at 160K (Rear)
C	Switch			KB-1			US-26	Attach to R1B.
D	Cover			KB-5				Attach to R1C.
R1A	1000Ω	½	75B11-21	F1-5	RTV-395	* QJ-397	UF13R	Contrast (Panel)
B	1Meg	½		R2-54			UR16A †	Volume (Rear)
C	Switch			KB-1			US-26	Attach to R1A.
R2A	200KΩ	½	75C13-63	B-46	A47-200K-S	Q11-129	U-43	Vert. Hold
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R2A.
R3A	100KΩ	½	75C13-62	B-40	A47-100K-S	Q11-128	U-41	Brightness
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R3A.
R4A	2Meg	½	75C13-64	B-76	A47-2Meg-Z	Q13-139	U-55	Tone-Note 2
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R4A.
R5A	5Meg	½	75C20-28	AB-87	A47-5Meg-S	Q11-141	TA56L	Noise Gate
B	Shaft		Not Req.	AK-1	FKS-½	RQ	Not Req.	Attach to R5A.
R6A	2.5Meg	½	75C20-1	DX-83	A47-2.5Meg-S	Q11-239	SU-565	Height
B	Shaft		Not Req.	Not Req.	FKS-½	RQ	Not Req.	Attach to R6A.
R7A	3000Ω	½	75C20-7	AB-8	A47-3000-S	Q11-112	U-8	Vert. Linearity
B	Shaft		Not Req.	AK-1	FKS-½	RQ	Not Req.	Attach to R7A.

Note 1. Some versions may use an alternate control Part No. 75B11-21 in this application.
Note 2. Not used in some versions.
• Concentrikit Equivalent, K-2 Kit, Base Elements and Shafts; B17-108 & P1-126 (Panel)
B13-137 & R2-212 (Rear)
76-1 (Switch)
† Universal Replacement (Mallory Exact Duplicate Part No. UE57S).
♦ Universal Replacement (Mallory Exact Duplicate Part No. UE68S).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ADMIRAL PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R8	680K			BTS-680K	
R9	4700Ω			BTS-4700	
R10	820K			BTS-820K	
R11	560K			BTS-560K	
R12	220K			BTS-220K	
R13	10K				
R14	10K				
R15	82K				
R16	8200Ω			BTS-8200	
R17	3300Ω	2		BTB-3300	
R18	470Ω			BTS-470	
R19	8. 2Meg			BTS-8. 2Meg	
R20	4. 7Meg			BTS-4. 7Meg	
R21	2. 2Meg			BTS-2. 2Meg	
R22	150K			BTS-150K	
R23	1000Ω			BTS-1000	
R24	13KΩ 5%				
R25	1000Ω			BTS-1000	
R26	27K			BTS-27K	
R27	220K			BTS-220K	
R28	56Ω			BTS-56	
R29	27K				
R30	10K 5%				
R31	1000Ω			BTS-1000	
R32	220K			BTS-220K	
R33	47Ω			BTS-47	
R34	1200Ω			BTS-1200	
R35	1000Ω			BTS-1000	
R36	120Ω			BTS-120	
R37	2000Ω	7		PW7-2000	
R38	4700Ω			BTS-4700	
R39	100Ω			BTS-100	
R40	4700Ω	2		BTB-4700	
R41	8200Ω			BTS-8200	
R42	470Ω			BTS-470	
R43	180K			BTS-180K	
R44	56K			BTS-56K	
R45	2700Ω			BTS-2700	
R46	390K			BTS-390K	
R47	680K			BTS-680K	
R48	470K			BTS-470K	
R49	1000Ω			BTS-1000	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ADMIRAL PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R50	120Ω			BTS-120	
R51	390Ω			BTS-390	
R52	22K			BTS-22K	Note 1
R53A	10K			BTS-10K	
B	10K		† 63B6-15	BTS-10K	
C	47K			BTS-47K	
R54	4. 7Meg			BTS-4. 7Meg	
R55	3. 3Meg			BTS-3. 3Meg	Note 1
R56	470Ω			BTS-470	
R57	27K	1		BTA-27K	
R58	2Meg 5%			BTS-2Meg 5%	
R59	100Ω			BTS-100	
R60	1. 6Meg 5%			BTS-1. 6Meg 5%	
R61	3Meg 5%			BTS-3Meg 5%	
R62	470K			BTS-470K	
R63	220Ω			BTS-220	
R64	220Ω	2		BTB-220	
R65	6800Ω			BTS-6800	
R66	15K			BTS-15K	
R67	270K		♦ 63C9-3	BTS-270K	
R68	1. 6Meg			BTS-1. 6Meg	
R69	47K			BTS-47K	
R70	470K			BTS-470K	
R71	120K			BTS-120K	
R72	68K			BTS-68K	
R73	22K	2		BTB-22K	
R74	4. 7Meg			BTS-4. 7Meg	
R75	2. 2Meg			BTS-2. 2Meg	
R76	3300Ω			BTS-3300	
R77	6800Ω			BTS-6800	
R78	3300Ω			BTS-3300	
R79A	38. 4K		‡ 63C9-1		
B				BTS-220K	
R80	220K			BTS-2. 2Meg	Note 2
R81	2. 2Meg			BTS-150K	
R82	150K			BTS-15K	
R83	15K			BTS-1. 5Meg	
R84	1. 5Meg			BTS-220K	
R85	220K			BTS-100K	
R86	100K				
R87	560Ω				

RESISTO

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ADMIRAL PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R88	560Ω				
R89	820Ω			BTS-820	
R90	100K 5%				
R91	100K 5%				
R92	4. 7Meg				
R93	470K				
R94	5600Ω				
R95	1500Ω				
R96	150K				
R97	3900Ω				
R98	82K				

Note 1. Not used in some versions.
Note 2. Some versions use a 2. 7Meg ½W resistor in
Note 3. In some chassis, R104 and R105 may be repl
Note 4. Use in early production versions.
† Items R53A, R53B, R53C, C51A, C51B, C51C are co
• Items R67, C59A, C59B are combined in one unit.
‡ Items R79A, R79B, C62 are combined in one unit.

TRANSFORMER

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	ADMIRAL PART No.
T1	117VAC	575VCT	5V	6. 3V	80C35-8
	⑨ 1. 52A	⑨ . 210A	⑨ 3A	⑨ 12A	

① Tape 840VCT ⑨ 730VCT and 37VCT windings. Tape 5V ⑨
② Parallel and phase 6. 3V windings.
③ Parallel and phase 6. 3V ⑨ ' 6A windings, tape 6. 3V ⑨ 1. 2A

TRANSFORMERS (SV

ITEM No.	USE	ADMIRAL PART No.	Halldorson PART No.	Merit PART No.
T2	Horiz. Output Trans.	79D65-2	FB420 *	HVO-54 *
T3	Vert. Output Trans.	79B43-4	Z1900 ① ②	A-2824 ③ ④
T4A	Yoke (90°) Horiz. (18. 5MH)	94D87-10 ⑤	DF607 ⑥ ⑦	MDF-92 ⑥ ⑦
B	Vert. (37MH)			

① Use 15 to 1 turns ratio.
② Connect as auto transformer.
③ Drill new mounting hole(s).
④ Cut and tape yellow lead.
⑤ Includes plug, Admiral Part No. 88A18-3, and resistors R87 a
⑥ Use original horizontal yoke damping network.
⑦ Loosen and rotate core clamp 180°, then connect same as origi

*HORIZONTAL OUTPUT TRANS

Use Original Width Coil Unless

	ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connection
	5	5	5	
	6	3	4	
	7	See Note ⑧ 3	2	
	8	1	1	
Special Notes →		⑧ ⑨	⑨	

⑧ Replace capacitor C45 with approximately 25 to 50MMF 4K
⑨ Requires 2 turns for filament winding.

TRANSFORMER (AL

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA ADMIRAL PART No.	Halldorson PART No.	Merit PART No.	Stan PART
T5	2.4KΩ	3-4Ω	Part of Speaker 78C107-3	Z1005 ①	A2902	A38

SPEAKE

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA ADMIRAL PART No.	REPLACEMENT DATA QUAM PART No.
SP1	6"x 9"	PM	3-4Ω	78C107-3	69A2
SP2	6"x 9"	PM	3-4Ω	78C107-4	69A2

COILS (R

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	ADMIRAL PART No.	MEISSN PART N
L1	FM Trap	. 2Ω		94D92-67	
L2A	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-52	
B	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-53	
C	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-54	
D	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-55	
E	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-56	
F	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-57	
G	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-58	

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	ADMIRAL Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL-DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	NOTES
C58A	150		463C-3	*PA-459	*PC-124	CG46	81L-151	UC-5315	5GA-T15	
B	10000					K062	81L-01	DC-531	5HK-61	
C60	22	200	64B18-21					PT94G23	2SK-P22	
C61	5000		63C43-1	BPD-005	DD-502	K080	81L-005	DC-535	5HK-D5	
C62	12000		†63C9-1	†PA-502	†PC-104				N03C12	
C63	2200	500	65B31-222	1464-0022		1R5D22			MB-322	
C64	.033	600	64B15-10							
C65	.047	400	64B16-32					PT94147		
C66	.033	400	64B15-10							
C67	.047	600	64B16-9							
C68	.001	1500	64A3-25	HVD-30-1000	DD30-102	CUB5D1	3EY-102	PT5Z1	6TM-D1	
C69	.001	400	64G31-1	BPD-001	D6-102	CUB6D1	GP2L-102	PT6Z1	6TM-D1	
C70	.001	400	64B31-1	BPD-001	D6-102	CUB6D1	GP2L-102	PT6Z1	6TM-D1	
C71	.0047	400	64B15-38	BPD-0047	DD-472	K079	81J-0047	PT94347	4SK-D47	
C72	.015	200	64B16-56	BPD-015	DD30-153		82L-015		2SK-S15	
C73	3900	500	65B21-392	1464-0038		1R5D39			MB-339	
C74	390	500	65B21-391		D6-391	5R5T39	81J-391		MB-339	
C75	680	500	65B21-681	1464-00068	D6-681	1R5T68	81J-681		MB-368	
C76	4700		64B17-47	BPD-0047	DD-472	K079	81J-0047	DC-535	5HK-D47	
C77	.047	600	64B9-9	BPD-05	DF-503	CUB5F47		PT5Z47	5TM-S47	
C78	.1	600	64B9-7	P603M-1	DF-104	CUB6P1		PT9Z01	6TM-P1	
C79	250	3000	[illegible]							
C80	150	3000	[illegible]							
C81	.047	1000	64A3-30	P1068N-047		CUB1S5		PT1S15	1STM-S47	
C82	.1	100	64A10-3	P2563N-1	DF-104	CUB2P1		PT2Q1	2TM-P1	Note 4

† Items C51A, C51B, C51C, R53A, R53B and R53C are combined in one unit.
* Items C59A, C59B and R67 are combined in one unit.
* Items C67, R76A and R76B are combined in one unit.
Note 3. Some versions use .1MFD unit (part #64B18-53) in this application.
Note 2. Some versions use .47MFD unit (part #64B16-49) in this application.
Note 4. Items C35 and C46 replaced with C82 in late versions.
Note 5. Not used in some versions.
Note 6. C56 may be 5000MMF or 1500MMF.
Note 7. Some versions may use 5000MMF in this application.

CONTROLS

ITEM No.	RATING RESIST-ANCE	RATING WATTS	ADMIRAL Part No.	CENTRALAB Part No.	CLAROSTAT Part No.	IRC Part No.	MALLORY Part No.	INSTALLATION NOTES
R1A	1000Ω	½	75B11-39	F1-5	RTV-585		UF1SR	Contrast -Note 1 (Panel)
B	1Meg	½		R2-61			UA15-T1Z53 ④	Volume (Rear) 100K (Rear)
C	Switch			KB-1			U5-36	Attach to R1B.
D	Cover			KB-1				Attach to R1C.
R1A	1000Ω	½	75B11-31	F1-5	RTV-395	* Q1-397	UF1SR	Contrast (Panel)
B	1Meg	½		R2-54			UR16A	Volume (Rear)
C	Switch			KB-1			U5-36	Attach to R1A.
R3A	300KΩ	½	75C13-63	B-46	A47-300K-S	Q1-139	U-43	Vert. Hold
B	Shaft		Not Req.	Not Req.	KSB-3	Not Req.	Not Req.	Attach to R3A.
R5A	100KΩ	½	75C13-62	B-40	A47-100K-S	Q1-138	U-41	Brightness
B	Shaft		Not Req.	Not Req.	KSB-3	Not Req.	Not Req.	Attach to R5A.
R4A	5Meg	½	75C13-64	B-76	A47-5Meg-S	Q2-137	U-55	Tone-Note 2
B	Shaft		Not Req.	Not Req.	KSB-3	Not Req.	Not Req.	Attach to R4A.
R8A	5Meg	½	75C30-38	AB-37	A47-5Meg-S	Q1-161	TA5EL	Noise Gate
B	Shaft		Not Req.	AK-1	FKS-j	Not Req.	Not Req.	Attach to R8A.
R6A	2.5Meg	½	75C30-1	BK-53	A47-2.5Meg-S	Q1-320	SU-560	Height
B	Shaft		Not Req.	Not Req.	FKS-j	Not Req.	Not Req.	Attach to R6A.
R7A	3000Ω	½	75C30-7	AB-8	A47-3000-S	Q1-113	U-5	Vert. Linearity
B	Shaft		Not Req.	AK-1	FKS-j	Not Req.	Not Req.	Attach to R7A.

Note 1. Some versions may use an alternate control Part No. 75B11-21 in this application.
Note 2. Not used in some versions.
* Concentrikit Equivalent, K-2 Kit, Base Elements and Shafts; B17-102 & P1-126 (Panel)
B13-137 & R3-213 (Rear)
78-1 (Switch)
† Universal Replacement (Mallory Exact Duplicate Part No. U57B).
* Universal Replacement (Mallory Exact Duplicate Part No. U56B).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	ADMIRAL Part No.	IRC Part No.	NOTES
R8	680K			BTS-680K	
R9	4700Ω			BTS-4700	
R10	820K			BTS-820K	
R11	680K			BTS-680K	
R12	220K			BTS-220K	
R13	10K				
R14	10K				
R15	82K				
R16	8200Ω			BTS-8200	
R17	3300Ω	2		BTS-3300	
R18	470Ω			BTS-470	
R19	5. 2Meg			BTS-5. 2Meg	
R20	4. 7Meg			BTS-4. 7Meg	
R21	3. 2Meg			BTS-3. 2Meg	
R22	150K			BTS-150K	
R23	1000Ω			BTS-1000	
R24	15kΩ 5%				
R25	1000Ω			BTS-1000	
R26	27K			BTS-27K	
R27	220K			BTS-220K	
R28	56Ω			BTS-56	
R29	27K				
R30	10K 5%				
R31	1000Ω			BTS-1000	
R32	220K			BTS-220K	
R33	47Ω			BTS-47	
R34	1200Ω			BTS-1200	
R35	1000Ω			BTS-1000	
R36	150Ω			BTS-150	
R37	2000Ω	7		PWT-2000	
R38	4700Ω			BTS-4700	
R39	100Ω			BTS-100	
R40	4700Ω	2		BTS-4700	
R41	8200Ω			BTS-8200	
R42	470Ω			BTS-470	
R43	180K			BTS-180K	
R44	56K			BTS-56K	
R45	2700Ω			BTS-2700	
R46	390K			BTS-390K	
R47	680K			BTS-680K	
R48	470K			BTS-470K	
R49	5000Ω			BTS-5000	

ITEM No.	RATING OHMS	RATING WATT	ADMIRAL Part No.	IRC Part No.	NOTES
R50	120K			BTS-120	
R51	390Ω			BTS-390	
R52	22K			BTS-22K	Note 1
R53A	10K			BTS-10K	
B	10K			BTS-10K	† 63B6-15
C	47K			BTS-47K	
R54	4. 7Meg			BTS-4. 7Meg	
R55	3. 3Meg			BTS-3. 3Meg	Note 1
R56	470Ω			BTS-470	
R57	27K	1		BTA-27K	
R58	3Meg 5%			BTS-3Meg 5%	
R59	100Ω			BTS-100	
R60	1. 6Meg 5%			BTS-1. 6Meg 5%	
R61	3Meg 5%			BTS-3Meg 5%	
R62	470K			BTS-470K	
R63	330Ω			BTS-220	
R64	220Ω	2		BTS-220	
R65	6800Ω			BTS-6800	
R66	15K			BTS-15K	
R67	270K			BTS-270K	* 63C9-3
R68	1. 6Meg			BTS-1. 6Meg	
R69	47K			BTS-47K	
R70	470K			BTS-470K	
R71	150K			BTS-150K	
R72	68K			BTS-68K	
R73	22K	2		BTS-22K	
R74	4. 7Meg			BTS-4. 7Meg	
R75	2. 2Meg			BTS-2. 2Meg	
R76	3300Ω			BTS-3300	
R77	6800Ω			BTS-6800	
R78	3300Ω			BTS-3300	
R79A	28. 6K				* 63C9-1
B	28. 6K				
R80	220K			BTS-220K	
R81	2. 2Meg			BTS-2. 2Meg	Note 2
R82	150K			BTS-150K	
R83	15K			BTS-15K	
R84	1. 5Meg			BTS-1. 5Meg	
R85	330K			BTS-330K	
R86	100K			BTS-100K	
R87	680Ω				

TV PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING OHMS	RATING WATT	ADMIRAL Part No.	IRC Part No.	NOTES
R88	560Ω				
R89	820Ω			BTS-820	
R90	100K 5%				
R91	100K 5%				
R92	4. 7Meg				
R93	470K				
R94	5600Ω				
R95	1500Ω				
R96	150K				
R97	3900Ω				
R98	82K				

ITEM No.	RATING OHMS	RATING WATT	ADMIRAL Part No.	IRC Part No.	NOTES
R99	470K				
R100	100Ω				
R101	1000Ω				
R102	100Ω				
R103	18K	3		BTB-18K	Note 3
R104	18K	2		BTB-18K	Note 3
R105	270Ω				
R106	15Ω	1			
R107	4. 7Ω			BW1-4. 7	
R108	560Ω	15			
R109	470K			BTS-470K	Note 4

Note 1. Not used in some versions.
Note 2. Some versions use a 2. 7Meg 1W resistor in this application.
Note 3. In some chassis, R104 and R105 may be replaced with a 5600Ω 2W resistor, or a 4700Ω 2W resistor.
Note 4. Use in early production versions.
† Items R53A, R53B, R53C, C51A, C51B, C51C are combined in one unit.
* Items R67, C59A, C59B are combined in one unit.
# Items R79A, R79B, C83 are combined in one unit.

TRANSFORMER (POWER)

ITEM No	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	ADMIRAL Part No.	Haldorson Part No.	Merit Part No.	Stancor Part No.	Thordorson Part No.	Triad Part No.
T1	UTTAC	575VCT	5V	6. 3V	80C35-8	P5699 ①	P5836 ②			R-85C ③
	⑤ 1. 52A	⑥ 210A	⑦ 1A	⑧ 12A						

① Taps 540VCT ⑤ 730VCT and 37VCT windings. Taps 5V ⑥ 6A winding.
② Parallel and phase 5. 3V windings.
③ Parallel and phase 6. 3V ⑦ 7. 6A windings, tap 6. 3V ⑧ 1. 2A windings

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	ADMIRAL Part No	Haldorson Part No	Merit Part No	RCA TYPE No.	Ram Part No	Stancor Part No	Thordorson Part No	Triad Part No
T3	Horiz. Output Trans.	78D65-2	PS430 *	HVO-54 *		X139 *	A-8256 *	FLY-76 *	D-49 *
T3	Vert. Output Trans.	78D43-1	21900 ①	A-2824 ②		V312	A-8141	23B34	A-102K ②
T4A	Yoke (90°) Horiz. (15.75KH)	84D67-10 ③	DF80T ④	MDF-92 ⑤	TY90F10/43 ⑥	DT-18A ⑦	Y-16 ⑧ ⑨	T-41-1 ⑧ ⑨	
B	Vert. (37MH)								

① Use 15 to 1 turns ratio.
② Connect as auto transformer.
③ Drill new mounting hole(s).
④ Cut and tape yellow lead.
⑤ Includes plug, Admiral Part No. 88A18-3, and resistors R87 and R88.
⑥ Use original horizontal yoke damping network.
⑦ Loosen and rotate core clamp 180°; then contact same as original.

***HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA**

Use Original Width Coil Unless Replacement Type is Listed

ORIGINAL TERMINAL CONNECTIONS	Haldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordorson Replacement Connections	Triad Replacement Connections
5	5	5	5	5	5	5	5
6	3	4	4	4	4	7	4
7	See Note ③ 3	3	3	3	3	6	3
8	1	1	1	1	1	1	2
Special Notes →	③ ③	③	③	③	③	②	③

② Replace capacitor C46 with approximately 25 to 50MMF 4KV (Min.)
③ Requires 2 turns for filament winding.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	ADMIRAL Part No.	Haldorson Part No.	Merit Part No.	Stancor Part No.	Thordorson Part No.	Triad Part No.	NOTES
T5	See Note 2.4KΩ	3-4Ω	Part of Speaker 71C05-2	21005 ①	A2903	A3849	22S45 ①	S-1X ①	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	ADMIRAL Part No.	QUAM Part No.	RCA TYPE No.	NOTES
SP1	6"x 9" Oval	PM	3-4Ω	78C107-3	69A2	238S1	
SP2	6"x 9" Oval	PM	3-4Ω	78C107-4	69A2	238S1	

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	ADMIRAL Part No.	MEISSNER Part No.	MERIT Part No.	MILLER Part No.	NOTES
L1	FM Trap	.2Ω		94D92-67				
L2A	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-53				Channel 2
B	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-53				Channel 3
C	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-54				Channel 4
D	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-55				Channel 5
E	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-56				Channel 6
F	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-57				Channel 7
G	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-58				Channel 8

COILS (cont)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	ADMIRAL Part No.	MEISSNER Part No.	MERIT Part No.	MILLER Part No.	NOTES
H	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-59				Channel 9
I	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-60				Channel 10
J	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-61				Channel 11
K	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-62				Channel 12
L	Ant., RF, Mixer Grid, Osc. Coils	0Ω		94D92-63				Channel 13
L3	Neut. Coil	0Ω		94D92-52				
L4	RF Choke	0Ω		94D92-69				
L5	Conv. Plate	.8Ω		94D92-64				
L6A	37.25MC Trap	.4Ω		72C13-5				
B	1st Video IF	0Ω		72C13-6				Includes resistors & caps.
L7	2nd Video IF	.4Ω	.4Ω	72C13-4				
L8	21.25MC Trap	.1Ω		72C13-3				
L9	3rd Video IF	.4Ω	.4Ω	72C13-2				
L10	4th Video IF	.7Ω	.9Ω	72B13-3				Includes . 005 Cap.
L11	Series Peaking Coil	3. 5Ω		72A34-3	19-3096	TV-126	6176	39 Microhenries
L12	Series Peaking Coil	5. 8Ω		72B5-23	19-3180 *	TV-124 *	6180 *	180 Microhenries, Wound on 4. 7KΩ resistor
L13	Shunt Peaking Coil	17Ω		72B5-30	19-3300		6174	600 Microhenries
L14	4. 5MC Trap	5. 8Ω		72C13-1				
L15	Series Peaking Coil	6. 8Ω		72B6-14	19-3280 ¤	TV-126 ¤	6181 ¤	384 Microhenries, Wound on 18KΩ resistor
L16	Shunt Peaking Coil	34Ω		72A11-1			6186 ∆	780 Microhenries, Wound on 10KΩ resistor
L17	Sound IF	4. 8Ω		72C13-1				
L18	Ratio Det.	4. 8Ω	.30CT	72C68-4	17-1033	TV-110	1446	Tertiary Winding. 8Ω

* Parallel with 4. 7KΩ resistor.
¤ Parallel with 180KΩ resistor.
∆ Parallel with 10KΩ resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES PRI.	DC RES SEC.	ADMIRAL Part No.	MEISSNER Part No.	MERIT Part No.	MILLER Part No.	RCA TYPE No.	Ram Part No	Thordorson Part No	NOTES
L19	53Ω		94C17-4							

FILTER CHOKE

ITEM No	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT 1000 ~(.)	ADMIRAL Part No.	Haldorson Part No.	Merit Part No.	Stancor Part No.	Thordorson Part No	Triad Part No.
L20	.210A	50Ω	1. 5HY	74B18-14	C5040	C5904	C5397	26C41	C-21X

FUSES

ITEM No.	TYPE	RATING	ADMIRAL Part No. FUSE	ADMIRAL Part No. HOLDER	LITTELFUSE Part No. FUSE	LITTELFUSE Part No. HOLDER	BUSS Part No. FUSE	BUSS Part No. HOLDER
M1	3AG S/B	5A 1SBV	84A 1-33 *	84A 5-4	312. 500 (3AG S/B 5A)	357001	MDL-5	4406

* Not used in early production.

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL Part No.	NOTES
M2	Dial Light	81A1-13	#51
M3	Tuner	94D92-7	VHF
M4	Printed Circuit Board	A49H-3	Video IF
M5	Printed Circuit Board	A49H-2	Sync
M6	Centering Device	94A71-1	
M7	Ion Trap	94A15-4	
B3	Trimmer Cap.	66A30-5	Horiz. Drive (170-780MMF)

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V21	Converter	6BE6	
V22	IF Amplifier	6BA6	

ITEM No.	USE	TYPE	NOTES
V23	Det.-AVC-AF Amplifier	6AV6	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	ADMIRAL Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL-DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	NOTES
C83	.1	200		P288N-1	DF-104	CUB2P1			PT2Q1	2TM-P1
C84	50		83S21-470	NPO-S150	TCZ-50	Z054	NPO-S28-500		Z7-S45	5TCC-Q5
C85	10000		64B15-36	BPD-01	DD-103	K083	81L-01	DC-511	5HK-61	
C86	.1	400	64B9-7	P489N-1	DF-104	CUB4P1			PT4Q1	4TM-P1
C87	10000		64B16-36	BPD-01	DD-103	K083	81L-01	DC-511	5HK-61	
C88A	100		63A7-1	BPD-0001	DD-101	G042	801-101	UC-531	5GA-T1	
B	100			BPD-0001	DD-101	G042	801-101	UC-531	5GA-T1	
C89	100			S1100	D6-101	TP34	GP1K-101	UC-531	5GA-T1	
C90	.01	400		BPD-01	D6-103	CUB6S1	GP3-103-103	DC-535	5TM-S1	
C91	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C92	.0033	500		BPD-0033	D5-222	CUB5D33	GP2-333-223	PT522	5TM-D33	Note 8

Note 8. Radio chassis 3DLB uses .0004MFD unit in this application.

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ADMIRAL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R110A B	2Meg 1Meg	‡	75B11-24	F1-71 R2-56		‡ QJ-569	UF26L UR16-T35	Tone (Panel) Volume tapped at 650K (Rear)

‡ Concentrikit Equivalent, K-2 Kit, Base Elements and Shafts; B11-139 & P1-109 (Panel) B19-137X & R2-127 (Rear)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ADMIRAL PART No.	IRC PART No.	
R111	22K			BTS-22K	
R112	12K	2		BTB-12K	
R113	1000Ω	1		BTA-1000	
R114	100K			BTS-100K	
R115	150Ω			BTS-150	
R116	47K			BTS-47K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ADMIRAL PART No.	IRC PART No.	
R117	4.7Meg			BTS-4.7Meg	
R118	1Meg			BTS-1Meg	
R119	560K			BTS-560K	Note 1
R120	680K			BTS-680K	Note 1
R121	82K			BTS-82K	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L21	Loop Stick	.5Ω		69B207-1				
L22	Osc. Coil	7Ω		69A52-11				Tapped ③ .7Ω
L23	Input IF	18Ω	18Ω	72C28-7	16-6758	BC-352	12-C1	
L24	Output IF	18Ω	18Ω	72C28-7	16-6758	BC-353	12-C2	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	ADMIRAL PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M8	409B20	55-T	GD-J	47	0-1 or S-1 and 0-3	

ASTATIC AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

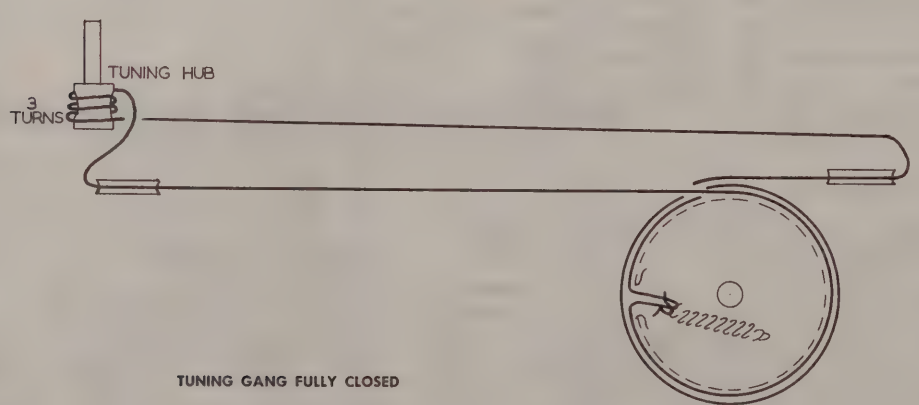
PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA				REMARKS
	ADMIRAL PART No.	JENSEN PART No.	FIDELITONE PART No.	WALCO PART No.	
M9	98B15-43	* JP-36 or † JPS-36 or ♦†JPS-36SD or ♦ JPS-36D		* W-33TPA or † W-33TPS or ♦† W-33DS or ♦ W-33TPD	* Metal † Jewel ♦ Diamond

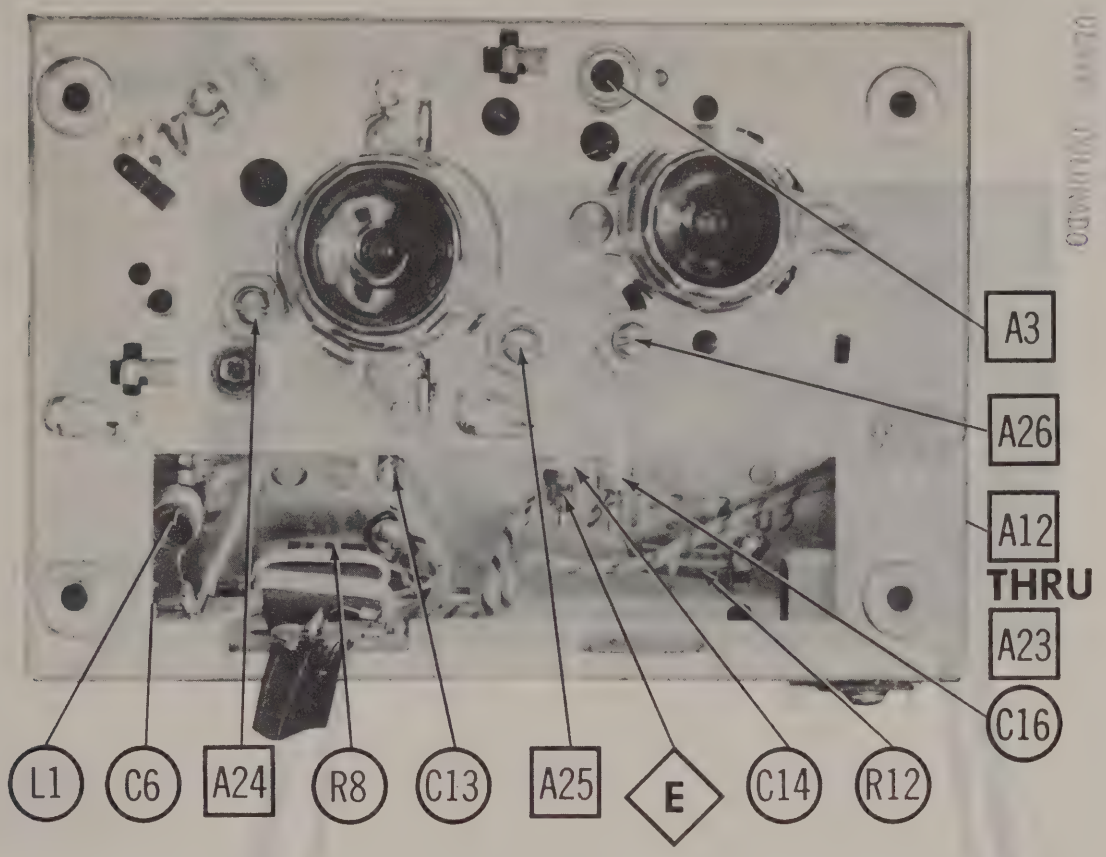
MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M10	Dial Light	81A1-8	
M11	Dial Light	81A1-8	
M12	Tuning Cap.	68B65	2 Gang (11-505MMF, 18-125MMF) Used in Radio Chassis 3D1C.
	Tuning Cap.	68B32	2 Gang (15-420MMF, 9-108MMF) Used in Radio Chassis 3D1B.
M13	Switch	77B49	Selector (Rotary, Wafer Type)
A32	Trimmer Cap.	66B8-5	Ant. Trimmer (2-20MMF)

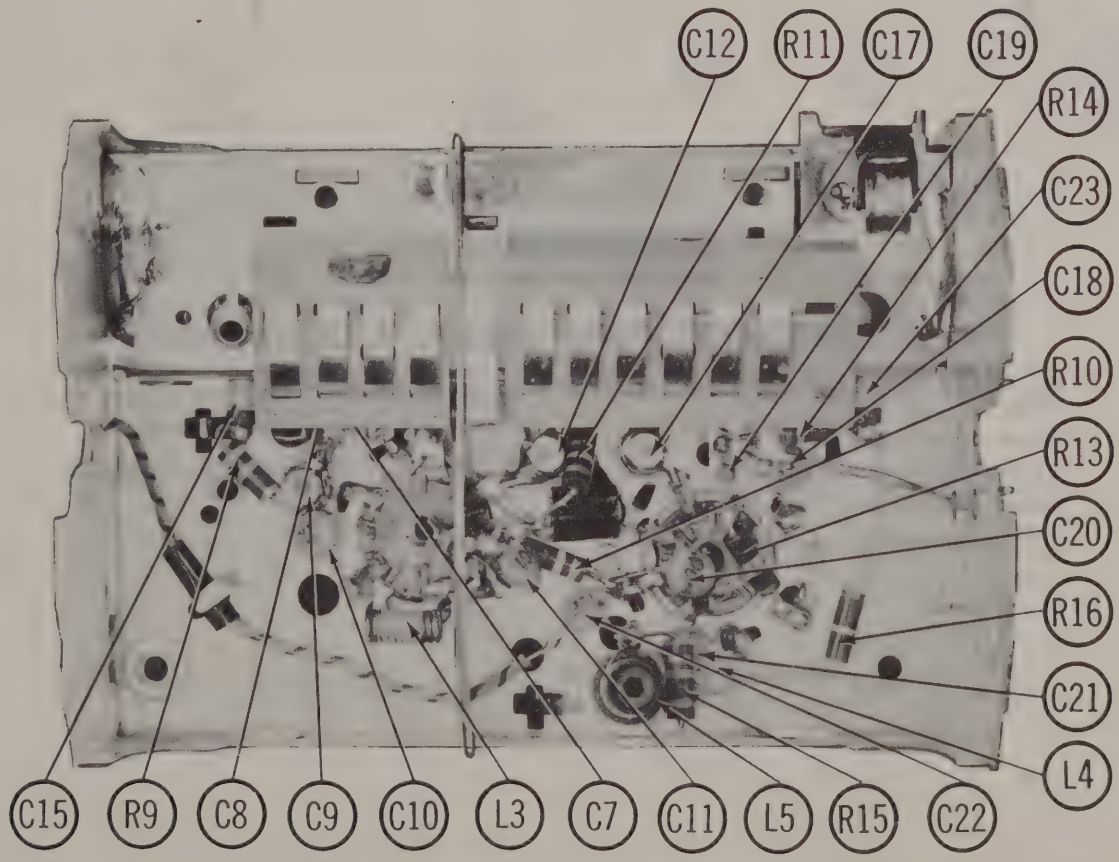


TUNING GANG FULLY CLOSED

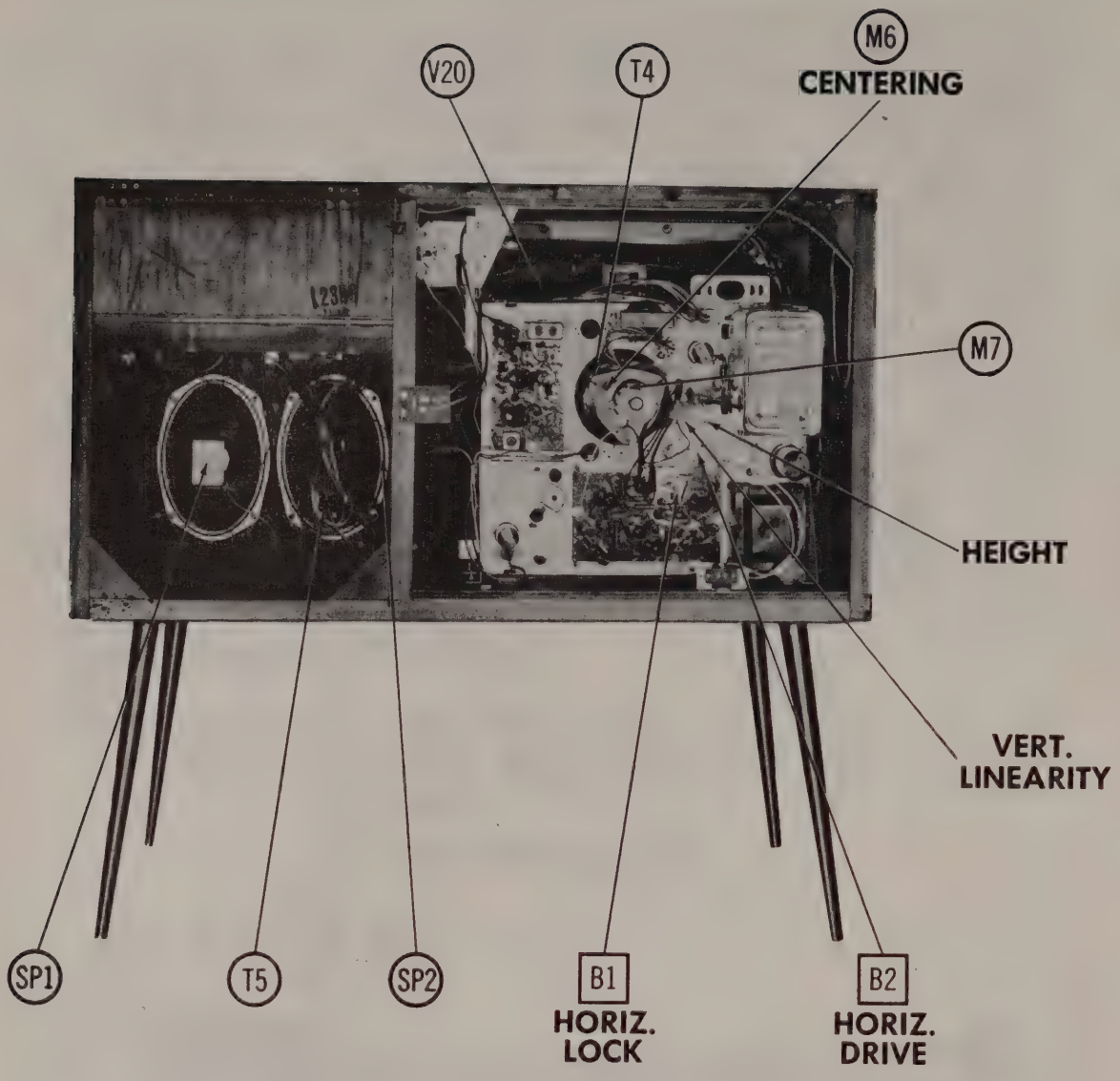
RADIO DIAL CORD STRINGING



RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Turn the set on and tune in a TV station, preferably with a test pattern.

2. Set the brightness and contrast for a normal picture.

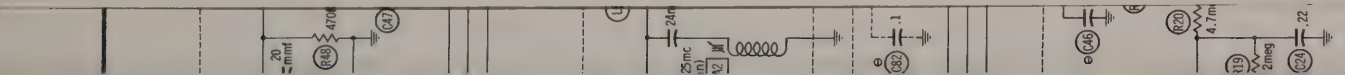
3. Rotate the horizontal adjustment slug (B1) clockwise until the picture loses sync. It may be necessary to momentarily switch off channel for picture to lose sync.

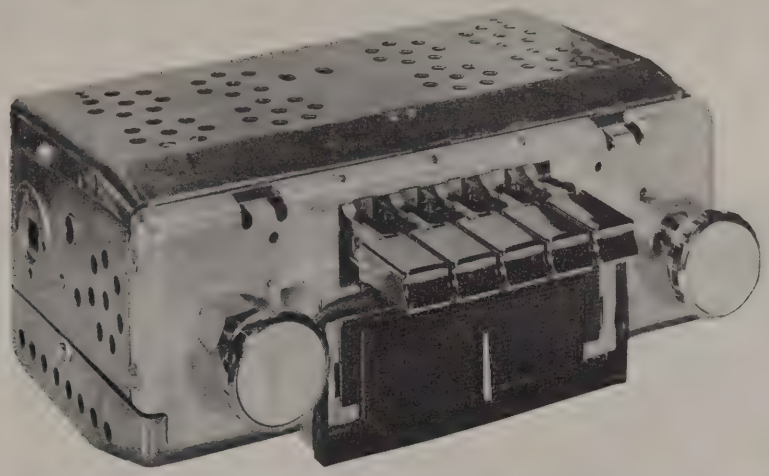
4. Turn B1 slowly counter clockwise until picture just falls into sync.

5. Turn to an unused channel. If vertical white lines appear near the center of the screen, slowly adjust the horizontal drive trimmer (B2) counter clockwise until the white lines disappear.

6. If in step 5 the horizontal drive was adjusted, tune in a station and repeat steps 3 and 4. Check horizontal sync by switching off channel and back again.

PROPERTY OF
L. I. HAMILTON SHIP
1801 MAIN ST.
DENVER, COLORADO





AMERICAN MOTORS
MODEL 8990378 (6MA)

TRADE NAME	American Motors Model 8990378 (Motorola Model 6MA) (For 1956 Hudson Wasp & Hornet and 1956 Nash Statesman & Ambassador Automobiles)
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois
TYPE SET	Battery Operated Custom Built AM Superheterodyne Automobile Receiver
TUBES (Six)	Types 12BA6 RF Amplifier, 12BE6 Converter, 12BA6 IF Amplifier, 12CR6 Det.-AVC-AF Amp., 12AB5 Output, 12X4 Rectifier
POWER SUPPLY	12 Volt Storage Battery RATING 3 Amp. @ 12.6 Volts DC
TUNING RANGE—BROADCAST	540KC-1605KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Tone control to "high".
Steps 3, 4 and 5 not necessary except in case of tampering or tuner component replacements.
Manufacturer recommends using alignment tool part #66A76278 for step 4.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V2). Low side to chassis.	265KC (400%Mod)	High frequency end stop	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	Fig. 1	Thru dummy to antenna receptacle	1605KC	"	"	A5, A6, A7	"
3.	"	"	"	"	"	A5, A6, A7	If tuner core adjustment is necessary, back out tuner cores 1" so that they will not effect trimmer. Adjust for maximum output.
4.	"	"	1180KC	Using tuning control move carriage in 19/64" from position in step 3.	"	A8, A9, A10	Adjust in order given for maximum output.
5.	"	"	1605KC	High frequency end stop.	"	A5, A6, A7	Adjust for maximum output.

With radio installed in car and antenna fully extended, tune in a weak station around 1400KC and adjust A7 for maximum volume.

PUSH BUTTON ADJUSTMENT

Pull push button to the right and out. Tune to desired station manually. Press push button in firmly. Repeat for remaining push buttons.

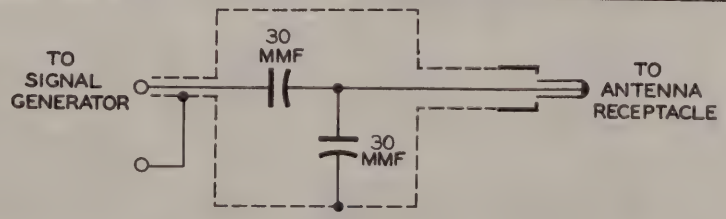


FIG. 1

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

AMERICAN MOTORS
MODEL 6990378

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	12BA6	
V2	Converter	12BE6	
V3	IF Amplifier	12BA6	
V4	Det.-AVC-AF Amplifier	12CR6	
V5	Output	12AB5	
V6	Rectifier	12X4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■15	350	23A485677	AFH3-104	C077	FP328	TMT-89	T-465	TVL-3630
B	▲10	350							
C	20	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	22		21R120539	NP0-DI22	TCZ-22	Z024	NP0K-220		5TCC-Q22	
C3	150		21R410112	BPD-00015	DD-151	G046	811-151	UC-5315	5GA-T15	
C4	8.2		21R120547	NP0-SI8.2		Z016	NP0A-8R2			
C5	.05	200	8R121005	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C6	47		21R114207	N750-DI47	TCN-47	N033	N750K-470	NT-5447	5TCU-Q47	
C7	.05	400	8R121567	BPD-05	DF-503	CUB4S5		PT415	4TM-S5	
C8	.01	400	8R121002	BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C9	.002	600	8R121568	BPD-002	D6-202	CUB6D2	GP2-333-202	PT622	6TM-D2	
C10	.02	200	8R121003	BPD-02	DF-203	CUB2S2	817-02	PT412	2TM-S2	
C11	.05	200	8R121005	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C12	.01	400	8R121002	BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C13	470		21R114554	BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C14	.003	600	8R121569	DI-0003	D6-302	CUB6D3	GP2-333-302	PT623	6TM-D3	
C15	.04	1000	8A121549	P1088N-04		CUBI6S4		PT1614	10TM-S4	
C16	.5	100	8K122076	VHC36		ST2P5		RF480	68P20	
C17	.5	100	8K122076	VHC36		ST2P5		RF480	68P20	
C18	.5	100	8K122076	VHC36		ST2P5		RF480	68P20	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	250K	½	18B535177	F1-44	RTV-541C		UE1375S	Volume (Panel)-tapped @125K
B	1Meg			R2-51				Tone (Rear)
C	Switch			KB-4				Attach to R1B

RESISTORS

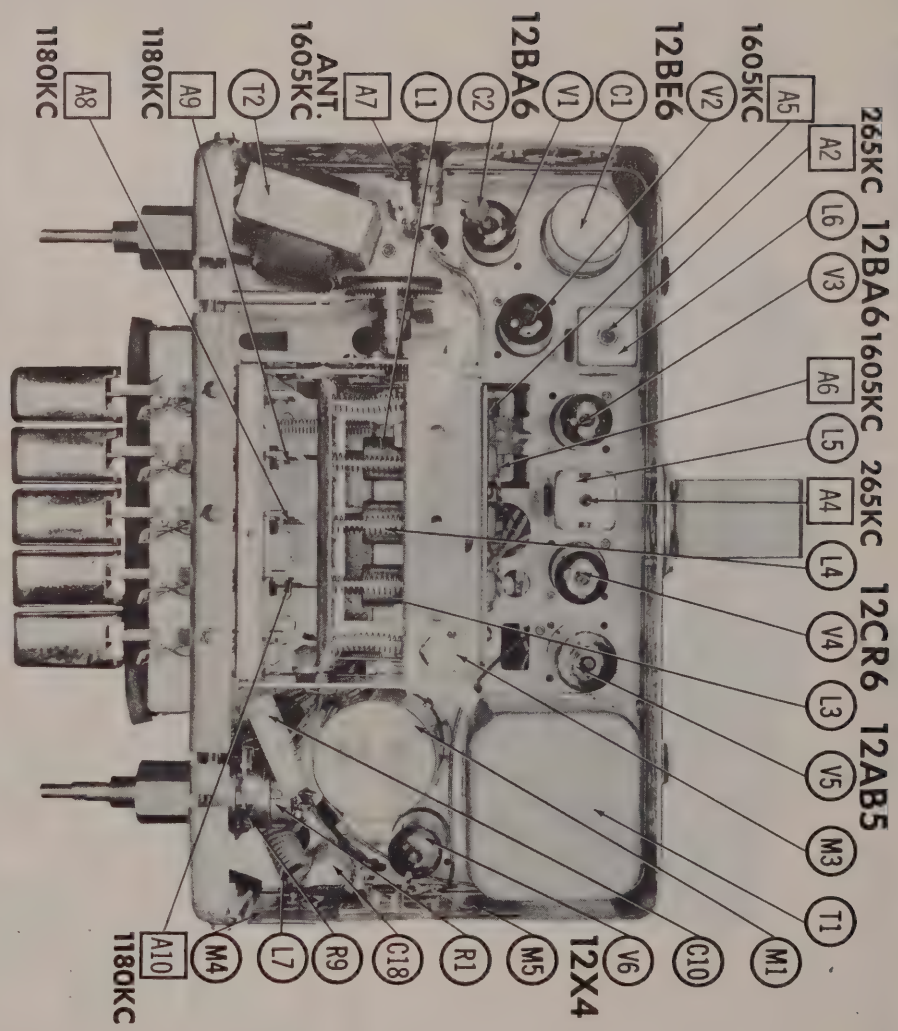
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R2	470K		6R6032	BTS-470K	
R3	10K	1	6R6430	BTA-10K	
R4	47K		6R6056	BTS-47K	
R5	470Ω		6R6090	BTS-470	
R6	12K	2	6R5766	BTB-12K	
R7	47K		6R6056	BTS-47K	
R8	1Meg		6R6004	BTS-1Meg	
R9	15K		6R6477	BTS-15K	
R10	3.3Meg		6R2118	BTS-3.3Meg	
R11	220K		6R6015	BTS-220K	
R12	1Meg		6R6004	BTS-1Meg	
R13	470K		6R6032	BTS-470K	
R14	270Ω	1	6R6336	BTA-270	
R15	2200Ω	2	6R476130	BTB-2200	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	12.6VCT @1.6A	560VCT @.052A			25C530737-A					

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	7.5KΩ	3-4Ω	25B530178-0	Z1115	A-2900	A-3878	24S52	S-7X	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	RCA TYPE No.	
SP1	5 x 7"	PM	3-4Ω	50K530293	57A1	257S1	
SP2	5 x 7"	PM	3-4Ω	50K530293	57A1	257S1	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	14Ω		24K536048				Core part #76K536035
L2	RF Coil	5.3Ω		24A535029				48 Microhenries, wound on 22K resistor
L3	RF Coil	14Ω		24K536042				Core part #76K536035
L4	Osc. Coil	.8Ω	5.3Ω	24K536043				Core part #76K536036
L5	Input IF	46Ω	46Ω	24B532152	16-6752	BC-350	12-H1	
L6	Output IF	50Ω	50Ω	24K532153	16-6754	BC-354	12-H6	
L7	Fil. Choke	0Ω		24K592269			5221	1 Microhenry
L8	Vib. Hash Choke	.1Ω		24A534494				21.2 Microhenries

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA				NOTES
				MOTOROLA PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	RADIART PART No.	
M1	Interrupter	12V	115∿	48B522000	6301	G859	6301	

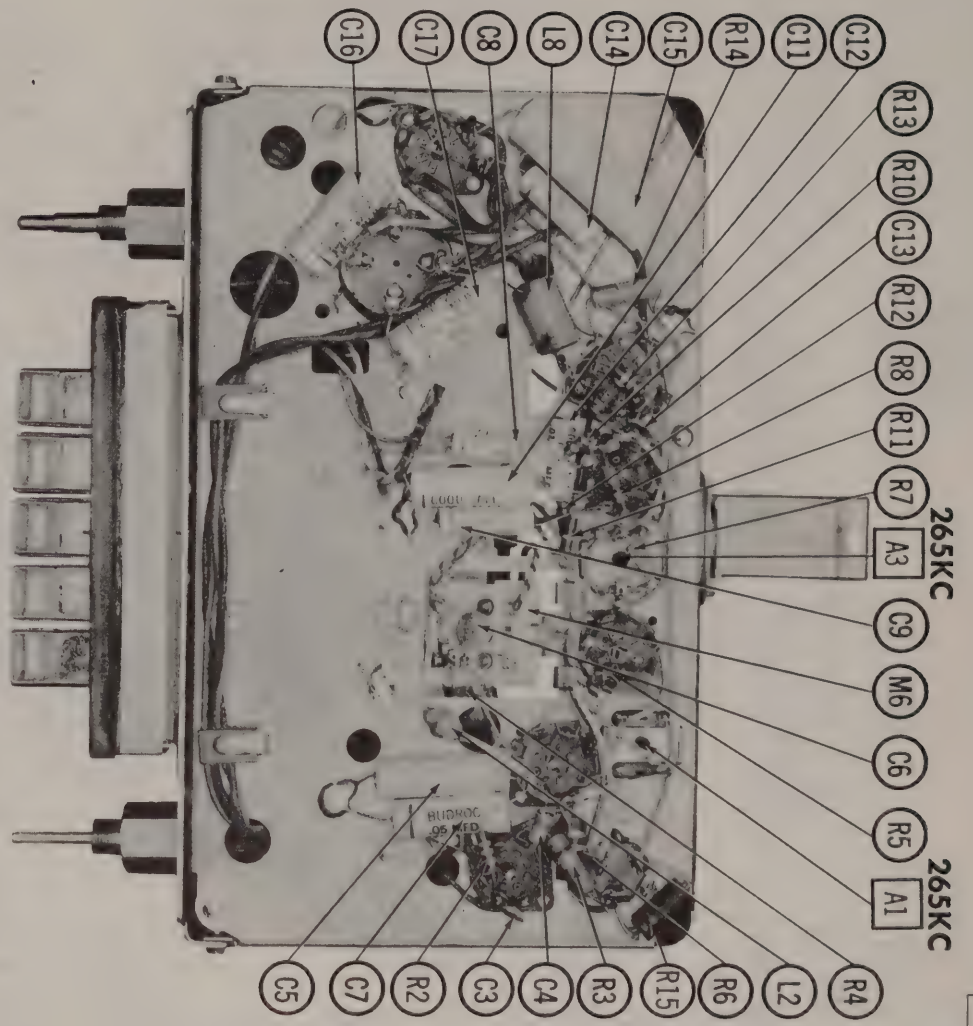
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MOTOROLA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	1AG	5A 32V	65R122345	9K536119	301005. (1AG 5A)	155004	AGA5	HRF

MISCELLANEOUS

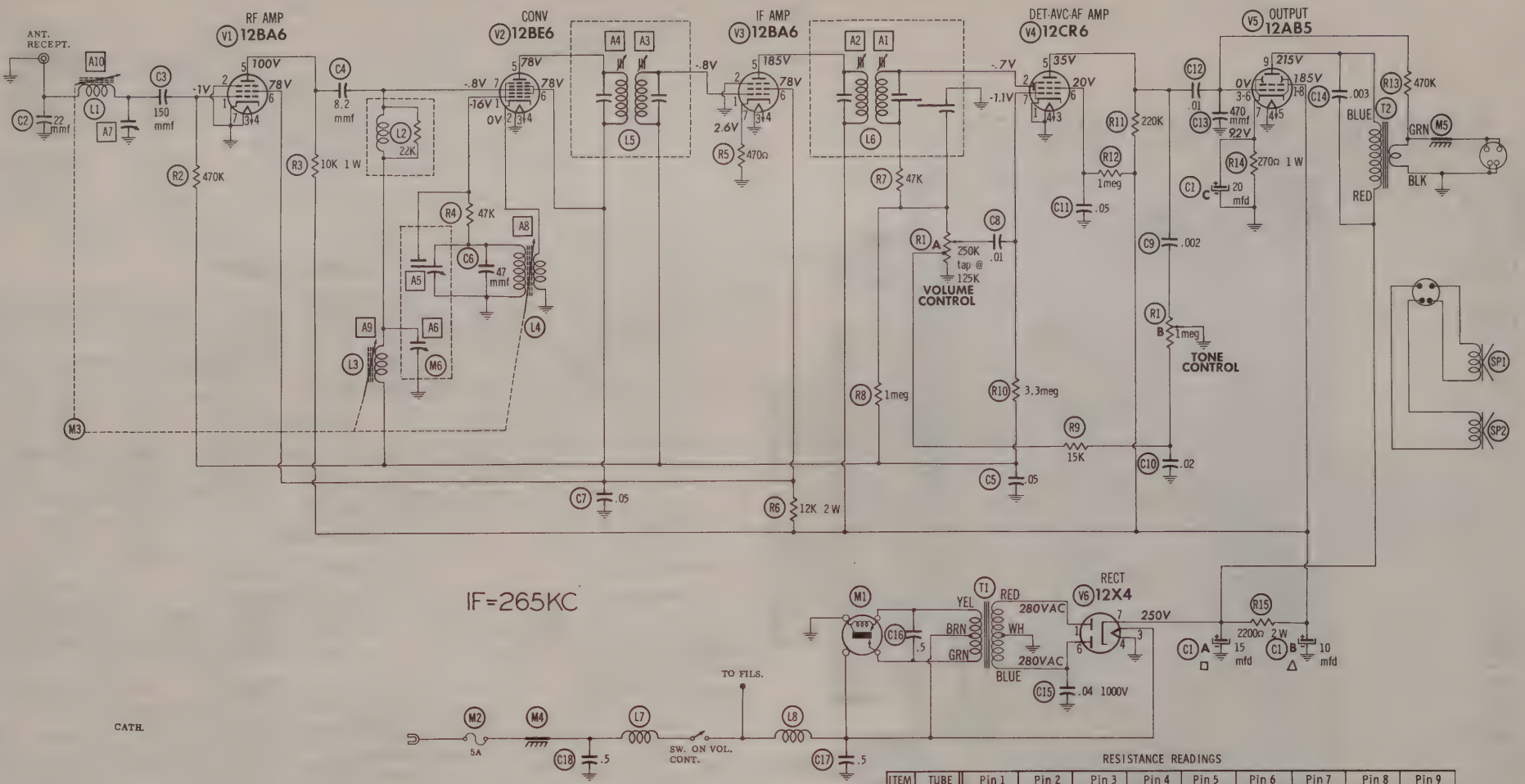
ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M3	Tuner	77D535541	Permeability (Model AT-171), includes L1, L3, L4
M4	Spark Plate	64K531672	Power input
M5	Spark Plate	64K531672	Audio Output (T2) secondary
M6	Trimmer Cap.	20B535030	Dual trimmer; osc., A5 (370-450MMF); RF, A6 (230-330MMF). Unit also consists of 47MMF
A7	Trimmer Cap.	20A501419	Ant. (50-280MMF)
	Knob	36K536715	On-off-tone
	Knob	36K536713	Tuning
	Knob	1V503006	Volume
	Pushbutton	38B535178	5 used
	Dial Pointer	1V537946	

CHASSIS—BOTTOM VIEW



SET 329 FOLDER 3

AMERICAN MOTORS MODEL 899378



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12BA6	1.6Meg	0Ω	0Ω	.1Ω	†12K	†14K	0Ω		
V2	12BE6	47K	.7Ω	0Ω	.1Ω	†14K	†14K	1.2Meg		
V3	12BA6	1.2Meg	0Ω	0Ω	.1Ω	†2.2K	†14K	470Ω		
V4	12CR6	0Ω	300K	.1Ω	0Ω	†220K	†1Meg	4.5Meg		
V5	12AB5	†2200Ω	TP	470K	0Ω	.1Ω	470K	270Ω	†2200Ω	†680Ω
V6	12X4	310Ω	NC	.1Ω	0Ω	NC	290Ω	14K		

† MEASURED FROM PIN 7 OF V6.
NC - NO CONNECTION
TP - TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on components values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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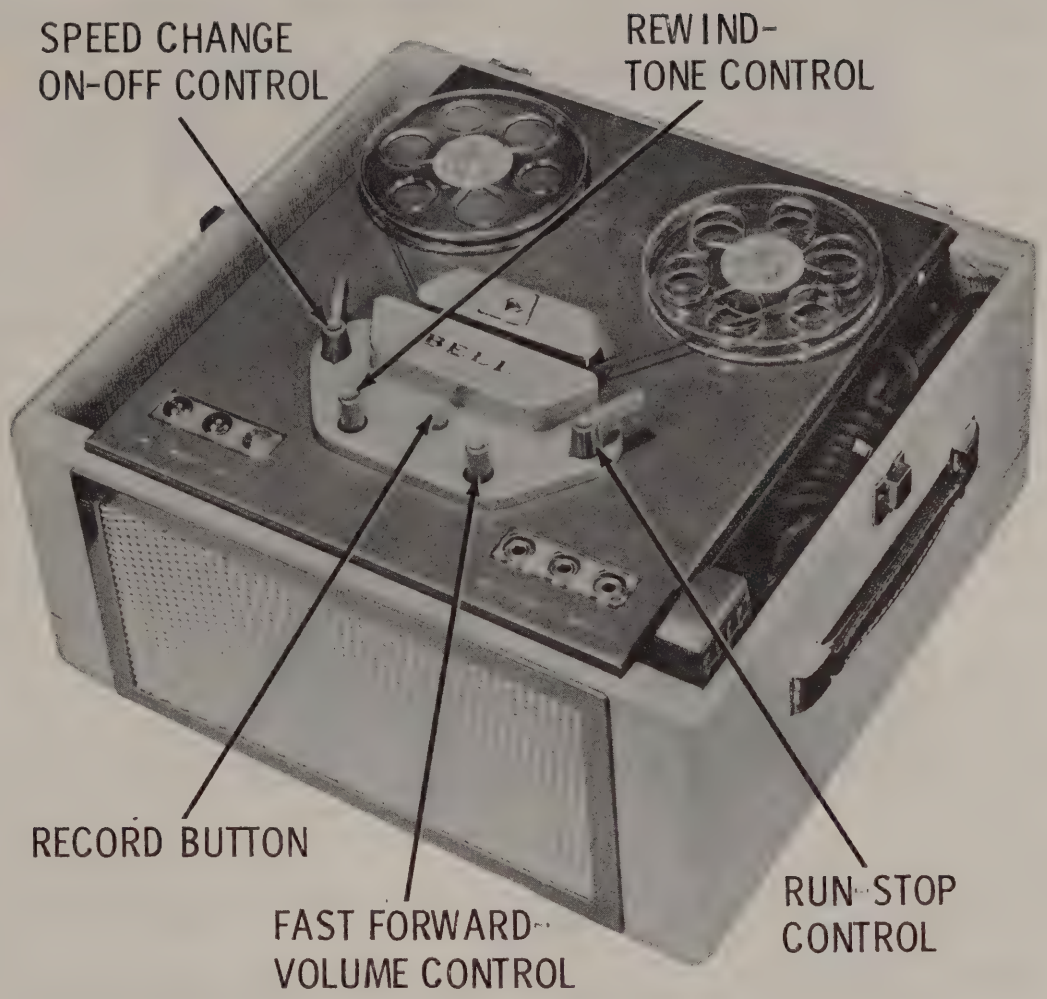

BELL
MODEL RT-75

BELL
MODEL RT-75

MODEL RT-75

3-SPEED TAPE RECORDER AND PLAY BACK UNIT

Manufactured by:

BELL SOUND SYSTEMS, INC.
A Subsidiary of Thompson Products, Inc.
555 Marion Road
Columbus, Ohio

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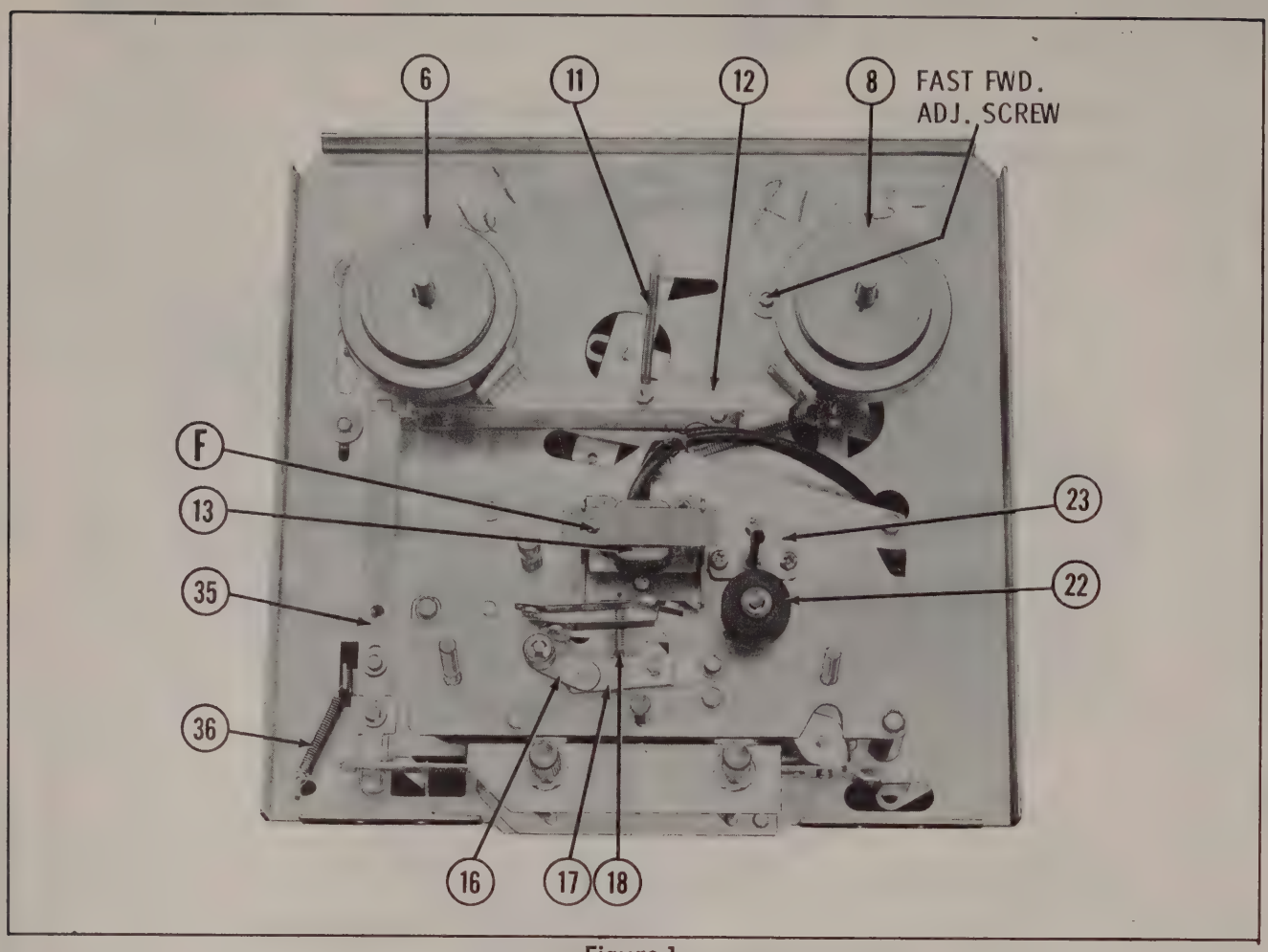


Figure 1

GENERAL INFORMATION

The Bell Model RT-75 is a three speed, dual track tape recorder.

A single control knob turns power to the motor and amplifier "On" and "Off" and selects the desired speed (1 7/8, 3 3/4, or 7 1/2 inches per second).

The dual track feature allows more recording time on each reel and with light weight tape, as much as eight hours total or four hours each side, may be had on a 7" reel at slowest speed.

Push buttons provide for "Fast Forward" and "Fast Rewind"; these same buttons act as "Volume" and "Tone" controls.

Two output jacks permit use of an external speaker or high fidelity amplifier system. A terminal strip inside the amplifier is available for 500 ohm output, at 30 dbm level.

A removable cover plate on the bottom of the cabinet allows easy access to tubes, motor, fan, hum adjustment, and 500 ohm output terminal.

Built in interlocks prevent the operator from placing the machine in more than one mode at a time. This prevents tape breakage, spillage, or accidental erasure.

SPECIFICATIONS

Size: 16 3/8" x 15" x 9 1/8" less hardware.

Weight: 35 lb. approx.

Power Required: 110-120 volts 60 cycle A.C. only — 100 watts.

Overall Frequency Response: 30 to 10,000 cycles at 7 1/2 I.P.S.

Inputs (three): 2 microphones, 1 radio-phono-amplifier - TV.

Outputs (two): External Speaker, actual impedance 3.2 ohms — use any speaker 4 to 16 ohms; External Amplifier, high impedance.

Power Output: 3 watts.

Speeds (three): Play or Record. 7 1/2, 3 3/4, or 1 7/8 inches per second.

Fast Forward: 1200 ft. in 90 seconds.

Fast Rewind: 1200 ft. in 70 seconds.

Wow and Flutter: Less than .25% at 7 1/2 I.P.S.

Speaker: 6" x 9" heavy duty oval.

Type of Erase and Bias: High Frequency (A. C.) 60KC.

Tube Complement: 1-12AY7 or ECC-83, 1-12AX7, 1-6C4, 1-6V6GT, 1-6X5GT.

Controls: 1. Speed Change, On-Off Control.
2. Run-Stop Control.
3. Record Push Button.
4. Tone and push button rewind.
5. Volume and push button fast forward.

OPERATING INSTRUCTIONS

Preparing The Bell For Recording-

1. Place the recorder on a flat surface and remove the cover. Make certain that the "Run-Stop" control is in the "Stop" position and that the "Speed" control is in the "Off" position.

2. Insert the A. C. power cord plug into a convenient 110-120 volt, 60 cycle A. C. outlet.

Threading The Tape-

1. Place a reel of "A" wind tape on the supply reel support (6) and an empty reel of the same size on the takeup reel support (8).

2. Unwind about two feet of tape. Hold a section of tape straight with both hands and insert the tape into the tape slot. Insert the free end of the tape into one of the radial slots in the hub of the empty reel. Rotate reel counter clockwise three of four turns to secure and take up all slack between reels.

To Record From Microphone-

1. Turn recorder on by placing speed control knob (1) in the speed position desired. Allow approximately 30 seconds for the unit to warm up. Insert the microphone plug into the Mic. 1 input jack. Use Mic. 2 input jack only when using two microphones or when mixing with Radio, Phono., or TV programs. If microphone is set on a hard surface, place sponge rubber or several thicknesses of cloth underneath it to absorb any vibrations. Set record level before recording by depressing the red record button and observing the flash of the neon record level indicator. While sound source is striking microphone, carefully adjust the volume control so that the level lamp flashes on peak passages.

NOTE: Correct recording volume is very important. If the neon level lamp flashes all the time, the recording will be overloaded and distorted on playback. If level lamp does not flash at all, playback will be weak and contain high background noise.

2. After level adjustment has been set, turn the run-stop control (2) to "Run". The tape is now moving and any sound entering the microphone will be recorded on the tape. When recording is finished, turn control (2) to "Stop".

To Record From Radio, Phono, Or TV-

Recordings can be made from a radio or television receiver by placing the microphone near the loudspeaker, however this type of recording is usually not satisfactory because of background noises picked up by the microphone and lack of good quality. A better recording can be made by connecting the "Radio" input of the recorder to the radio or TV voice coil terminals. In the case of an AM-FM Tuner, connect to the tuner output.

Dual Track Operation-

NOTE: Recordings are made on half the width of the tape at one time. Since it is impossible to edit and splice one "track" without affecting the other, recordings which are to be edited should be limited to one track.

1. After a reel of tape has been recorded, a second track may be recorded on the same reel (without rewinding) by removing the full reel from the right hand spindle, turning it over, then placing on the left hand spindle. Place the empty reel on the right hand spindle.

2. Rethread the tape and proceed with the recording as previously described.

3. After the second track has been recorded, the first track is ready to be played without rewinding, by changing reels as described in Step #1 above.

To Rewind-

After a recording is made, tape may be rewound by pushing "Rewind" knob down positively. It will lock in position so it is unnecessary to hold down. When desired portion of tape is rewound, push down and release "Fast Forward" knob. This will stop the tape. When rewinding a complete or large portion of a reel, it is better to take tape out of slot and run straight across from reel to reel. This saves wear on the head and is somewhat faster since it eliminates the drag set up by the tape running through the head slot.

To Play A Recording-

1. To play back recordings, place reels on reel supports and thread as previously described. Turn the speed control pointer (1) to the correct speed; this also supplies power to the motor and amplifier. Place the run-stop pointer (2) in the "Run" position and adjust the "Volume" and "Tone" controls for desired listening level. If speed of tape is unknown, the speed control pointer (1) can be turned after the unit is playing. After the recordings have been played, return the run-stop pointer (2) to the "Stop" position. This releases the pressure roller (22) from the capstan and stops the tape.

2. After the first track has been played, the second track may be played, without rewinding, by turning the reels over and placing them on opposite reel platforms. This may be done at any time during playback.

NOTE: When recordings are played back thru the built-in speaker, remove any phone plug which may be inserted in either the External Speaker or High-Z output jacks. These jacks, when used, disconnect the built-in speaker.

Fast Forward-

In playback, it is sometimes desirable to skip portions of tape to a particular spot. To do this, push down and hold "Fast Forward" knob until tape arrives

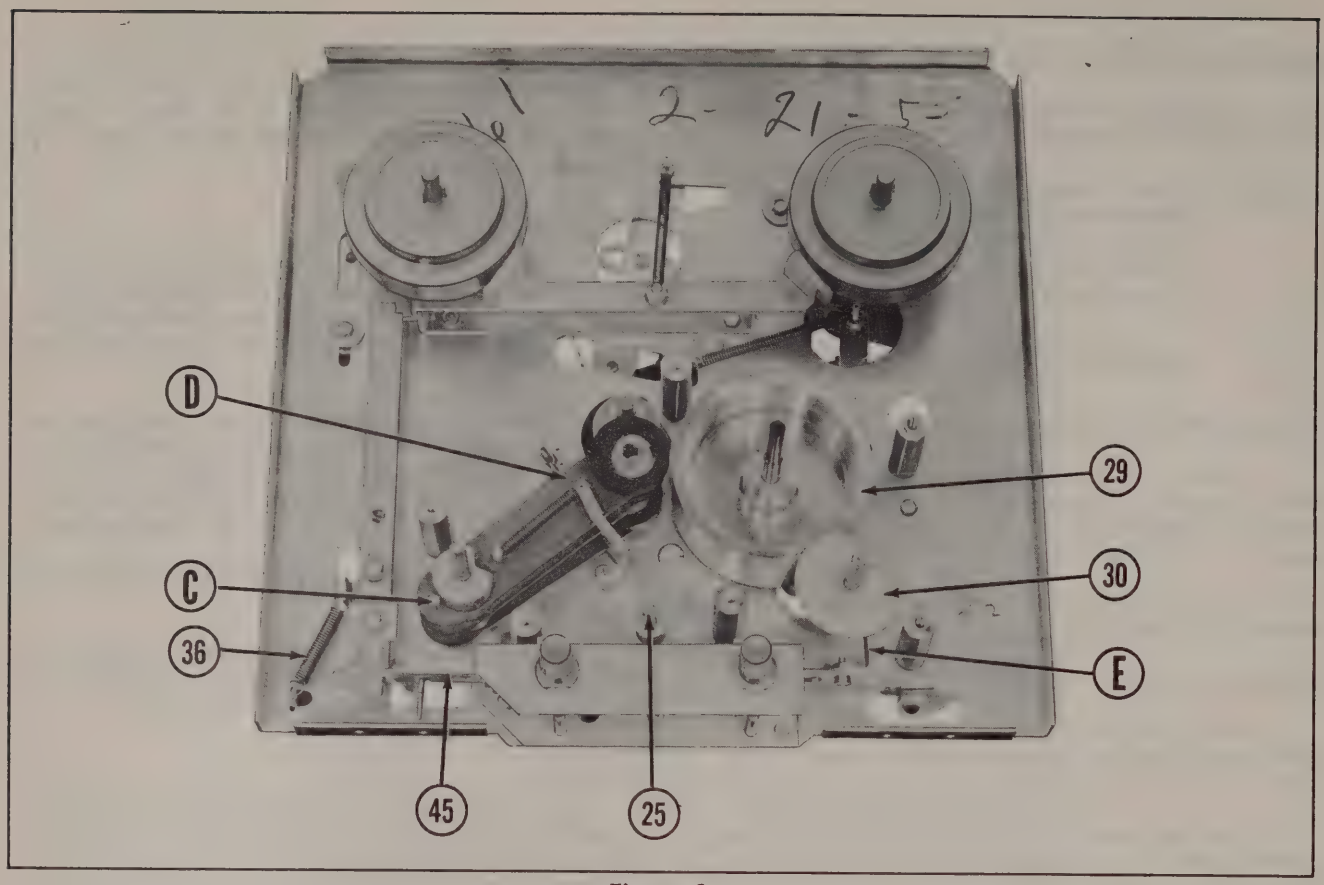


Figure 2

at desired spot. To stop tape, release the "Fast Forward" knob. To prevent unnecessary head wear, tape should be taken out of head slot when large portions of a reel are to be skipped.

DISASSEMBLY INSTRUCTIONS

Top-Deck Plate-

To service parts located directly under the top-deck plate (5) it is not necessary to remove the unit from the case. Remove top-deck plate as follows:

Remove four screws (one in each corner of the turned down flange) and use a #10 spline wrench to remove the two pointer knobs. Lift top-deck plate straight up.

To Remove Recorder From Cabinet-

To remove recorder from cabinet, first remove the top-deck plate (5). Next, remove the three screws from the rear of the cabinet located just above the vent grille. Remove four screws from the bottom of the case and lift recorder straight up. Remove speaker leads before lifting recorder completely out of case.

To Remove Amplifier From Transport Mechanism-

For some mechanical adjustments on the bottom of the tape transport mechanism, it will be necessary to first remove the amplifier. Remove as follows:

Remove three sheet metal (hex. head) screws from each side plate. Remove four hex. head screws from the jack and lamp brackets, 2 each side. Remove head plug and motor plug from their sockets. Loosen the three Phillips head screws in the right hand side plate so that the amplifier and power cord will miss flanges as the mechanical unit is lifted straight up. Tighten the three Phillips head screws in the right hand side plate and place the mechanical unit on a flat surface.

ADJUSTMENTS

When the amplifier is removed from the mechanical unit, tape may be placed on the unit and driven in any model by using an AC power cord with a socket that will fit the motor plug. On units with serial #14,000 to 15,200 use a Bell part #B-20209P19 socket. On units above serial #15,200, use a Bell part #B-20209P29 socket.

Rewind Belt Adjustment-

Leave 12 to 15 turns of tape on the take-up reel (right hand) and push rewind button all the way down. Tape should start in motion. If the recorder meets this test, shut off the motor with speed control pointer (1). Place run-stop pointer (2) in the run position. Now start the motor by placing speed control pointer (1) in the 7 1/2 I.P.S. position. The motor should start tape under load, not stall. If motor stalls, rewind belt (67) is too tight. If machine fails to rewind last few turns of tape, rewind belt (67) is too loose. Make adjustment as follows, if necessary.

Remove the reels and loosen the two screws (1/2 turn) which mount the rewind idler pulley assembly (66). To loosen belt, reach under bottom plate and slide the rewind idler pulley assembly (66) toward the

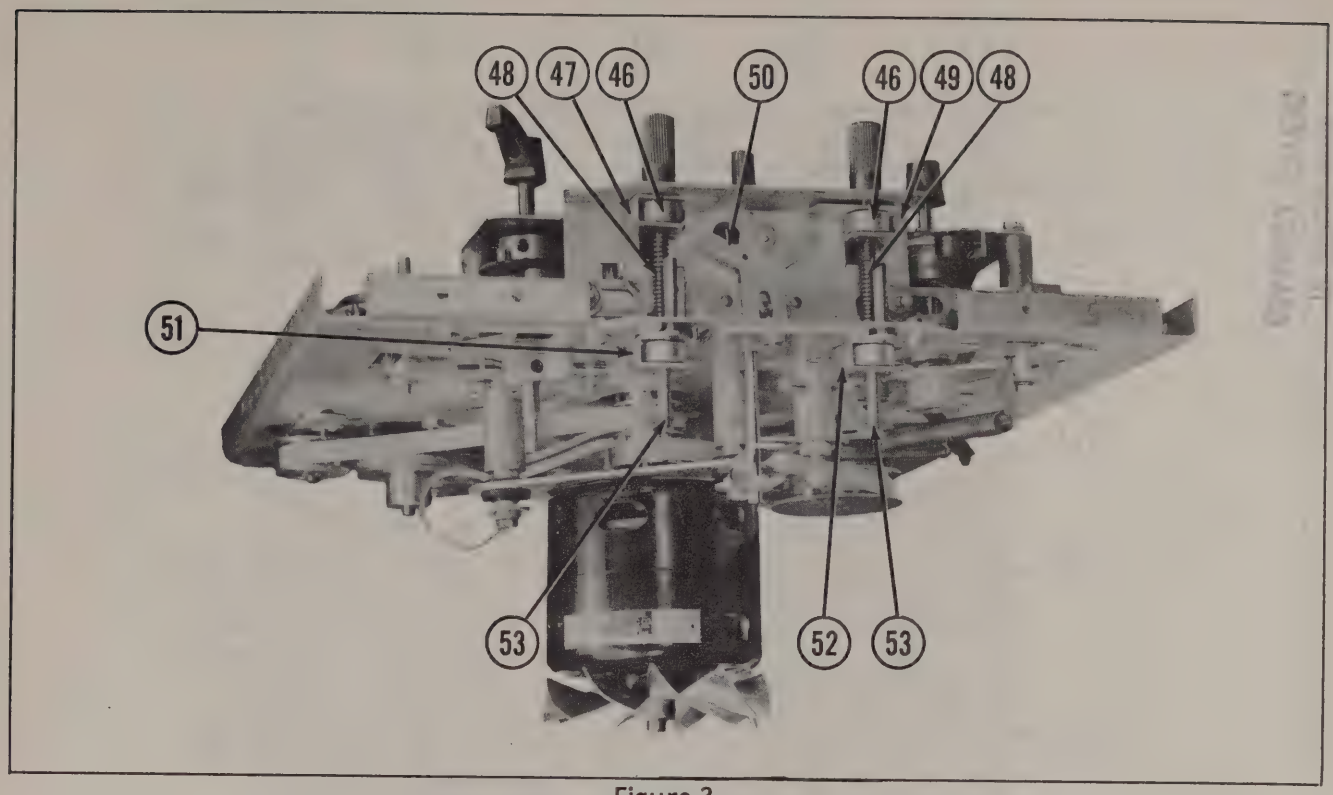


Figure 3

front and to the left. To tighten belt, move idler assembly (66) toward the rear and to the left. Move the idler assembly about 1/32" at a time, then install reels and re-make tests.

Fast Forward Adjustment-

Leave 12 to 15 turns of tape on the left hand (supply) reel and push fast forward button all the way down and hold. Tape should start to wind in forward direction.

Next, hold right hand (take up) reel from turning (do not press down). Observe the take-up belt (73), it must be turning and clutch plate (9) must be slipping against the take-up reel support (8), when the fast forward button is held down. If take-up belt (73) does not turn, it is too loose. Make adjustment as follows, if necessary:

Loosen the fast forward adjustment screw (see Figure 2) about 1/2 turn. To tighten belt, reach under bottom plate and slide the fast forward and play pulley assembly (71) away from the take-up reel support (8). Move very little at a time as this adjustment is very critical. After adjustment is made, tighten screw.

Check adjustment as follows:

1. Do not load tape on recorder.

2. Place run-stop pointer (2) in the "Stop" position.

3. Place speed control pointer (1) in one of the three speed positions.

4. Grasp the major brake assembly (12) and pivot it toward the front of the recorder. The take-up reel support (8) must not turn when the brakes are released. If reel support (8) turns, belt (73) is too tight.

Brake Adjustments — (Refer To Figure 5)-

Check brake operation as follows before making adjustments:

1. Place a full 7" reel of tape on the take-up reel support (8) and an empty reel on the supply reel support (6). Do not place tape in head slot but run straight across from reel to reel. Place recorder in "Rewind" position and when tape is up to fastest speed, stop tape by depressing the "Fast Forward" button. Release immediately. Tape must not spill or throw loops.

2. Place nearly a full reel on the supply reel support (6) and thread tape straight across from reel to reel (not through head slot). Place run-stop control in the "Run" position (this eliminates holding fast forward button down). When tape has reached fastest speed, place run-stop control in the "Stop" position. Tape must not spill or throw loops.

If brakes require adjustment, do so as follows:

1. (For units with serial #14,000 to 15,200 only). Check the two dimensions as shown in Figure 5. Measure from inside bottom plate flange to edge of brake pivot bracket. This should measure 2 1/4". To adjust for both dimensions, loosen the two screws (A) and re-position the brake pivot bracket.

2. (This adjustment is for all units). Check space between brake lever cam and brake lever (35). There should be some play, about 1/64". Also check to see that the brake lever cam is approximately in the center of the control arm slide (45).

Test brake release in Fast Forward, Rewind, and Run. Brakes must release in all three positions.

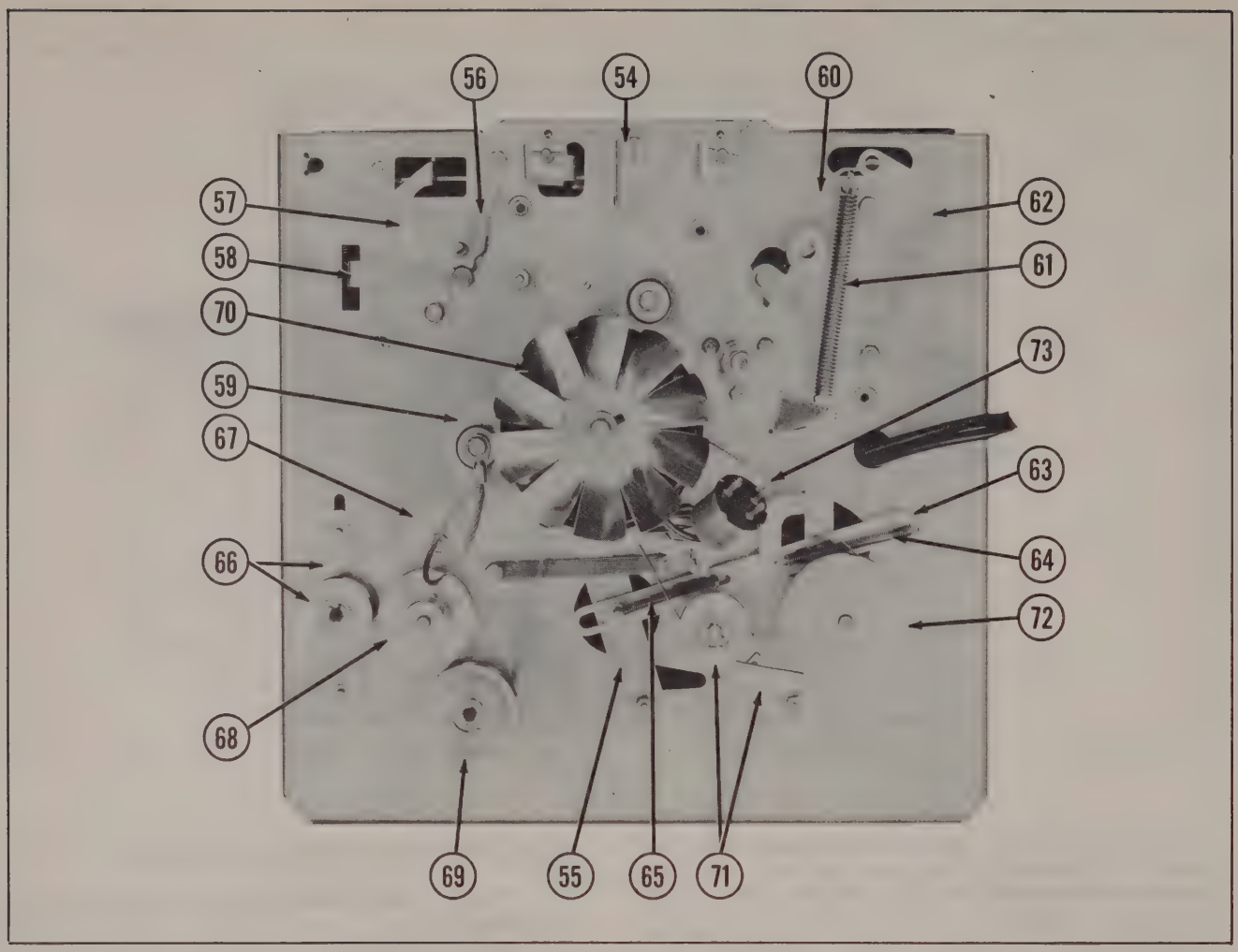


Figure 4

To change clearance between brake lever (35) and brake lever cam, loosen screws (B) holding brake lever bracket. Move bracket forward or backward to obtain the 1/64" spacing. Use this same adjustment to center cam in control arm slide (45). Move bracket to right or left to obtain correct spacing.

NOTE: (For units with serial #14,000 to 15,200 only). If brakes release more in one direction than another, that is more in fast forward than in rewind or visa versa, this can be equalized by sliding the brake lever bracket to the right or left after loosening screws (B).

Speed Slide Cam And Damper Adjustment-
(Refer To Exploded View And Figure 2)-

1. (For units with serial #14,000 to 15,200 and for units with serial numbers beginning with 25,000, 35,000 and 45,000). Speed cams (40), (41), and (42) must clear the control pins (point "C" Figure 2) by approximately 1/16" when that particular slide is engaged. Position of motor on motor mounting plate and position of motor mounting plate on spacers will effect this. See paragraph on motor mounting.

The control pins (point "C" Figure 2) must be in the center of the speed cam notch (40), (41), or (42), when that particular slide is engaged. To adjust, loosen set screw and turn cam. Spacing between the phenolic slides should be such that they are parallel to top and bottom plates. If a phenolic washer is used above cam, space between cam and slide is about .008 inch, if no washer, about .025 inches. Slide cam (40), (41), and (42) up or down to adjust. Adjust bottom cam (42) first.

2. (For units with serial #14,000 to 15,200 only). The phenolic slides must clear the sides of speed slide bracket (44) when that particular slide is engaged. Speed slide bracket (44) should be located as near the motor pulley and pressure roller (22) as the mounting slots will permit. This will allow full use of the slide springs.

3. (This applies to all units). The speed slide dampers (point "D" Figure 2) must press down firmly on the phenolic slides to hold idler wheels in position when engaged. However, this damper spring must not interfere with the smooth operation of the slide against its spring tension. Adjust damper springs carefully with mounting screws on side of speed slide bracket (44).

Capstan Actuating Cam (30) Adjustment-

The capstan actuating cam (30) must have some end play between top plate (24) and the capstan pressure arm (27). Also, there must be some play between cam (30) and flywheel (29). To adjust, turn run-stop control (2) to "Run". Loosen set screw in cam hub

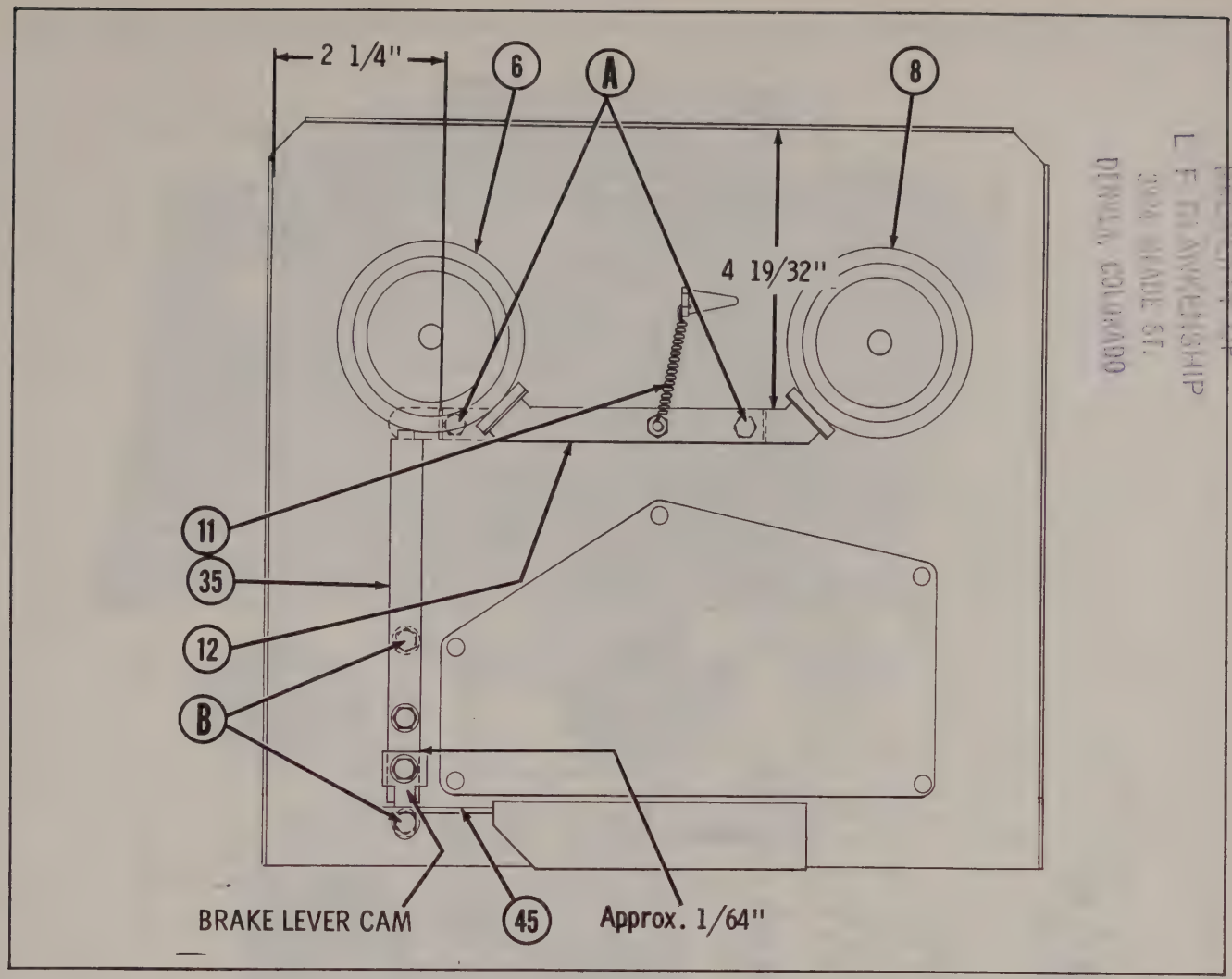


Figure 5

and slide cam (30) up or down. While making this adjustment, push wrench toward rear (turning cam) until pressure roller (22) is pushed away from the capstan shaft. Now, back up (pull wrench toward front) and after pressure roller (22) meets capstan shaft, move still further to provide some clearance. Check height of cam (30) again and tighten set screw.

Record Safety Release Cam (31) Adjustment-

(For units with serial #14,000 to 15,200 and for units with serial number beginning with 25,000 and 35,000). Adjust record safety release cam (31) with the run-stop control (2) in the "Run" position. With the point of the cam to the left, adjust cam so that the front diagonal slope of the pointer is parallel to the front of the bottom plate. Adjust height so that it contacts record safety release (point "E" Figure 2) approximately in the center.

With control (2) still in the "Run" position, adjust the safety release (point "E" Figure 2) so that it points to the center of the run-stop control shaft. Adjust by sliding to right or left in the slotted hole. Keep at right angles to the bottom plate. Tighten screw.

When properly adjusted, the red record button should return to its "up" position when run-stop control (2) is placed in the "Stop" position.

Motor Mounting And Spacing Adjustment-

(For units with serial #14,000 to 15,200). The motor mounting plate (59) is mounted on rubber shock mounts and if replaced or removed for any reason the spacing between flywheel (29) and the largest diameter of the motor pulley should be checked. This dimension should be .410 to .420 inches and can be accomplished by moving the motor plate on its spacers (3 hex. nuts) or by moving the motor on the plate (2 hex. nuts).

At the same time above dimension is checked, check the control pin adjustment as described under "Speed Slide Cam And Damper Adjustment". The motor must be positioned to meet both of these dimensions for good operation.

Volume And Tone Control Alignment-

If the volume or tone controls bind when rotated in either direction, remedy as follows: Remove driver linkage from both controls. Loosen hex. nut on both controls. Use another 3/8 - 32 nut and lock down tight on top of first nut, both controls. This will allow .010 to .012 play in the control shafts and will prevent binding.

Hum Adjustment-

The hum adjustment is located on right center of recorder, looking at vent opening with recorder resting

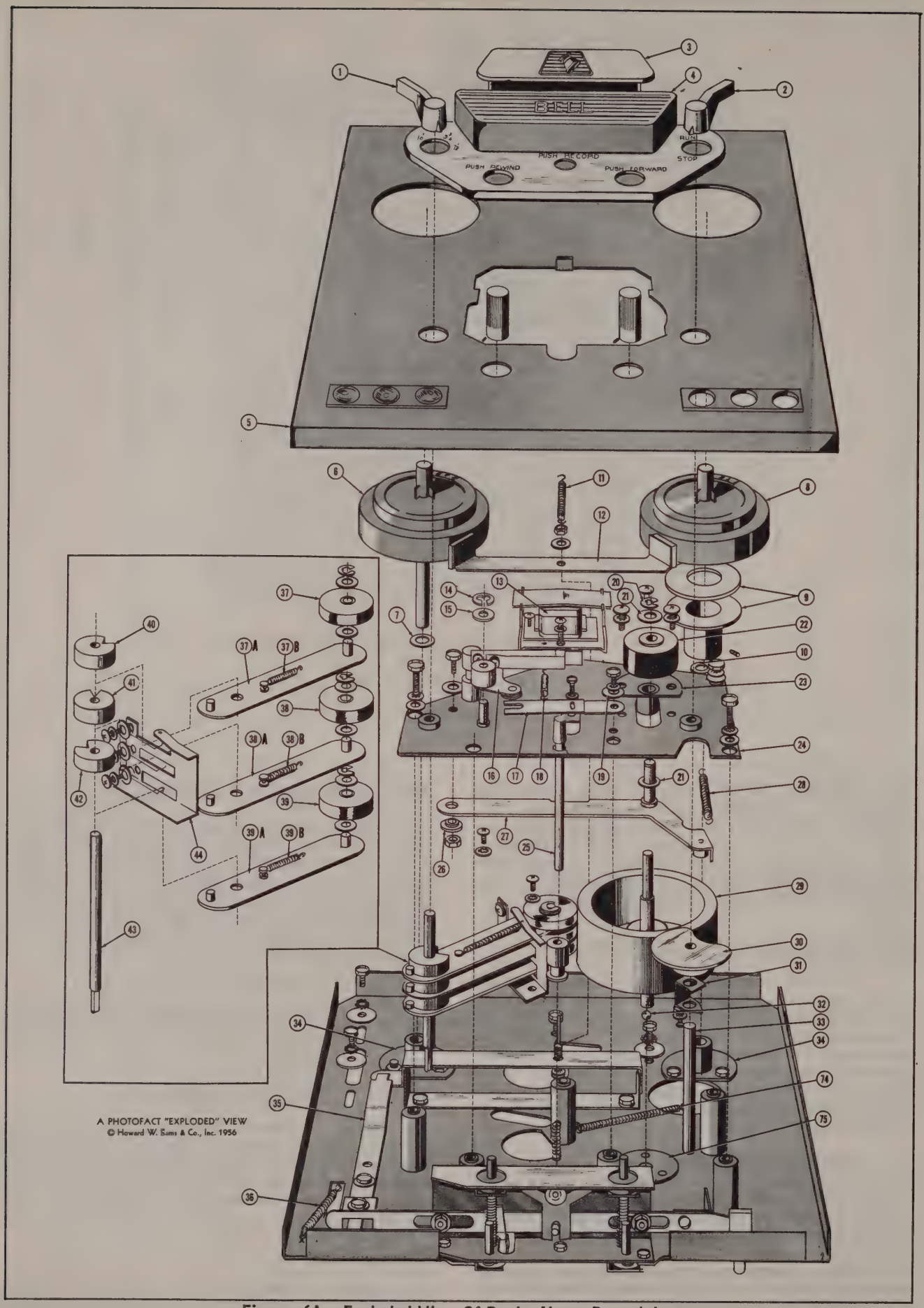


Figure 6A. Exploded View Of Parts Above Baseplate.

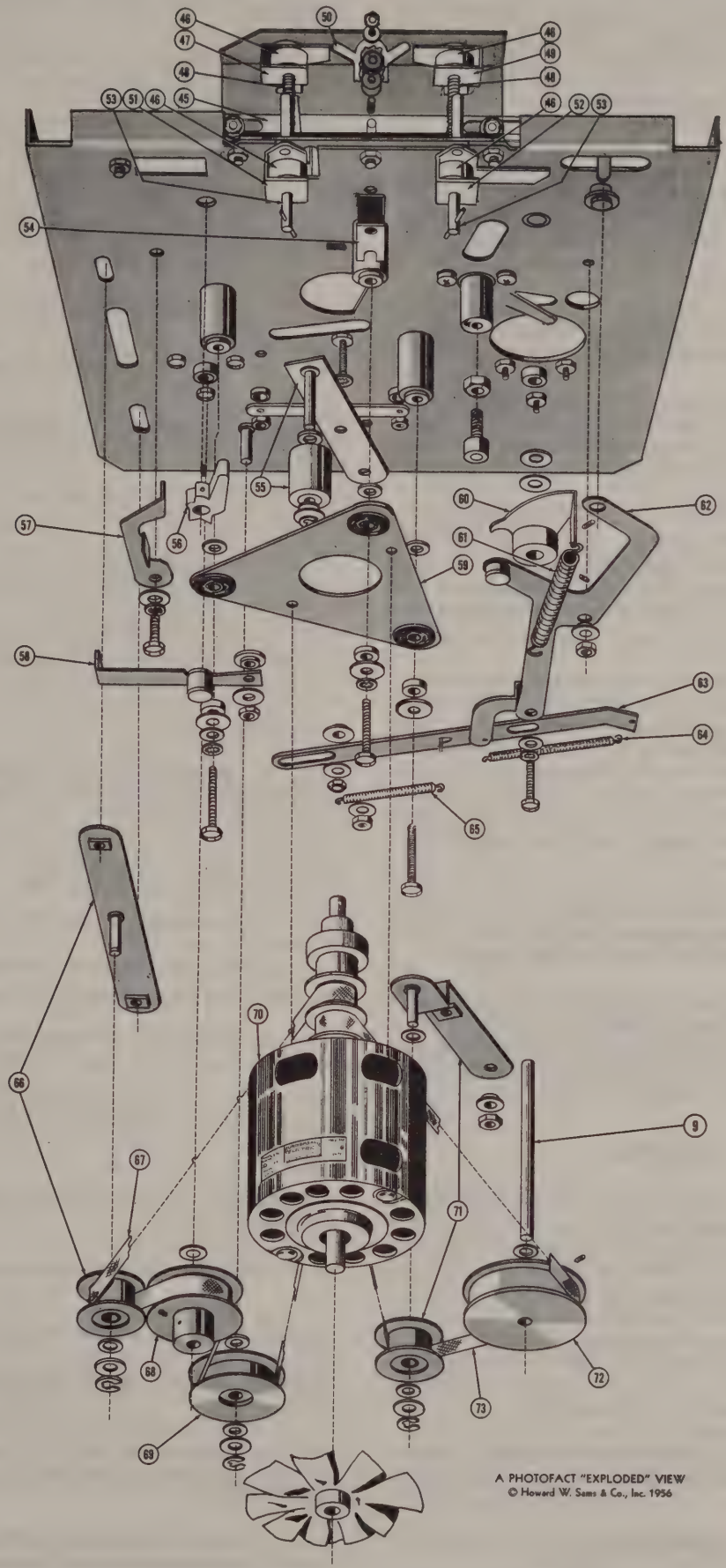


Figure 6B. Exploded View Of Parts Below Baseplate.

on back of case. To adjust, position recorder away from all strong electrical fields, such as transformers in amplifiers, motors, etc. Adjust with "Volume" and "Tone" controls at maximum. Adjust for minimum hum. Try line cord plug both ways.

Head And Pressure Pad Adjustments-

To properly check head alignment it is necessary to have a reel of pre-recorded alignment tape of 1 mil wave length. Play alignment tape back through recorder with an A. C. vacuum tube voltmeter connected across the speaker or 3.2 ohm load. Turn "Volume" and "Tone" controls full on. Output voltage should be 1.3 volts or higher.

CAUTION: Be sure recorder is in "Play" position to prevent erasure of alignment tape.

Three things can cause low meter readings) providing amplifier and tubes are working properly). Dirty head, improper pressure pad pressure, or wrong head alignment angle. Check these things as follows:

1. Check head to be sure there is no dirt on the pole piece or bakelite portion. Dirt holds the tape away from the pole piece and lowers output. If head is dirty, clean with head cleaning solvent, alcohol, or carbon tetrachloride. Wipe dry immediately after cleaning.

2. Adjust pressure pads so that maximum signal can be had with maximum pressure on poles of 1 ounce. Adjust record-play pad first. For best results, this pad should be shifted slightly to the right of center of pole. After maximum output is obtained, adjust erase pad. Hold pressure pad bracket (16) while pulling erase pad spring back with a spring scale. Adjust for a maximum reading of 1 ounce. Re-check record-play pad.

NOTE: Adjustment of either pad may affect the other, which means when adjustment is made to one pad, the other pad must also be checked.

3. Head alignment is accomplished by turning the screw (point "F" Figure 1) which is located directly to the left of the head. Turn this screw slightly in and out until the maximum voltage reading is obtained on the A. C. vacuum tube voltmeter.

CLEANING

The capstan shaft, pressure roller, tape guide, and play-record-erase head are subject to an accumulation of tape coating oxide which is worn off the tape as it passes these parts. These parts should be cleaned approximately every ten hours of running time. All of these parts except the pressure roller (22) may be cleaned with head cleaning solvent, alcohol, or carbon tetrachloride. Use alcohol or water when cleaning the pressure roller; never use carbon tetrachloride when cleaning any rubber driving surface.

CAUTION: To prevent scratching the head pole pieces, never use a metal tool when cleaning.

LUBRICATION

1. All the wiping surfaces of mechanical linkages should be free of dirt and foreign material and be lubricated with a very light grease. This lubricant should be at point of friction only and wiped clean from other surfaces.

2. All pulleys, rollers, and rotating shafts should be cleaned with a dry soft cloth and lubricated with 1 drop of #10 or 20 motor oil.

CAUTION: When oiling any bearing on which a rubber part is mounted, or part using a belt, apply only one small drop of oil. Oil and grease must be kept off all rubber idlers, belts and periphery of flywheel and off parts that might transfer oil or grease to them. Be sure no oil is on the portion of capstan extending above baseplate.

TROUBLES AND REMEDIES

Take-Up Reel Support (8) Will Not Take Up Tape In Play, Record, Or Fast Forward-

1. Fast forward spring (65) disconnected or broken.

2. Take-up belt (73) may be too loose. Adjust as described under "Fast Forward Adjustment".

3. Set screw in forward pulley (72) may be loose, allowing pulley to turn on its shaft. Tighten set screw.

4. Set screw in clutch plate (9) may be loose. Tighten set screw.

5. Check take-up belt (73) and associated pulleys for oil or grease. If necessary, clean with a petroleum solvent.

Recorder Will Not Rewind Tape-

1. Rewind spring (64) disconnected or broken.

2. Rewind belt (67) improperly adjusted. Adjust as described under "Rewind Belt Adjustment".

3. Set screw in rewind pulley (68) loose, allowing pulley to turn on its shaft. Tighten set screw.

4. Check rewind belt (67) and associated pulleys for oil or grease. If necessary, clean with a petroleum solvent.

Tape Spills Or Throws Loops When Recorder Is Placed In "Stop" Position-

1. Brake spring (11) disconnected or broken.

2. Brake assembly (12) improperly adjusted. Adjust as described under "Brake Adjustments".

Wow And Flutter (Record Or Play Back)-

In analyzing the source of wow, it is helpful to observe whether the rate of wow coincides with the period of rotation of the capstan, pressure roller, or speed roller.

1. Check the capstan (29) bearings to see that they are a free-running fit, but not loose. Both shaft and nylon bearing surfaces must be perfectly smooth. Dirt or grit will cause motion-modulation of the tape

and result in a rough-type flutter. Play can sometimes be taken up (if not excessive) by loosening and shifting the top capstan support (23). Clean up shaft and bearing with absorbent tissue, smooth up and use one drop of light oil on re-assembly.

2. Oil thrown onto driving surfaces will cause poor drive, resulting in wow and flutter. Driving surfaces are motor pulley, speed slide rollers (37), (38), or (39), flywheel and capstan (29), and pressure roller (22). Clean with a soft absorbent tissue or cloth lightly dipped in a naptha-type thinner. Do not soak. Severe wow at capstan speed may be do to a bent capstan shaft.

3. If flutter is high at a particular speed, check speed roller. Observe roller as unit operates, roller must spin smoothly, in a plane parallel to plane of flywheel rotation, and without vibration. If speed roller climbs on shaft, motor may be tilted excessively (check motor mounts) or speed slide may be warped (replace). Vibrating speed slide may be due to a bad speed roller (check shaft fit and concentricity). Damper springs (point "D" Figure 2) must press lightly on slides, just enough to hold in position, but not so hard as to cause excessive friction and interfere with freedom of sliding action. See "Speed Slide Cam And Damper Adjustment".

4. If the motor is out of balance and vibrates excessively it will cause flutter at approximately motor speed (29 C.P.S.). This may be due to a bent motor shaft or fan or due to a slightly bent or eccentric motor pulley. A bad or vibrating belt can also cause motor vibration.

5. The capstan pressure roller (22) can cause wow at its rotational speed. Check for clean bearing surfaces, clean roller O.D. and be sure operation is smooth. Pressure roller (22) must engage against capstan surface squarely and uniformly. Check for smoothness of end-thrust washers. Replace roller, if necessary.

6. A vibrating take-up reel support (8) can also reflect flutter into the machine thru tape or belts. If this is the case, replace the take-up reel support.

A vibrating reel support may also be caused by:

A. A bent clutch plate shaft (Item 9, Fig. 6B). If bent, replace.

B. A rough or uneven clutch surface (9), particularly if the take-up reel bearing fit is too free. To check clutch felt surface, remove the take-up reel support (8) and run machine in play position while holding a broad-bladed tool close to the felt surface to observe vertical motion.

It is difficult to face off the felt clutch surface by hand, therefore, replace the clutch and the take-up reel bearing (34), if necessary.

When the machine appears to function properly, hold the take-up reel support (8) above clutch plate (9) and run unit in play position. Lower the take-up reel support lightly against the clutch, only very slight vibration should be felt.

METHODS OF NOISE REDUCTION

1. Noisy drive idler bracket (55). If the drive idler bracket rattles against the baseplate, glue a piece of varnished cambric cloth on top of the bracket to prevent metal-to-metal contact. Light grease applied to the bracket and pivot will also help reduce noise.

2. Take-up reel support (8) noise. Place machine in run position without using tape. Lower the take-up reel support lightly against clutch plate (9), only very slight vibration should be felt. If vibration is excessive, replace clutch plate assembly (9).

3. Excessive take-up belt (73) noise. If the take-up belt is rubbing the bottom flange of the motor pulley, bend pulley bracket (71) slightly toward baseplate. If belt is riding high on motor pulley, bend down slightly.

4. Noisy pulleys. Remove pulleys and clean shafts and bearings carefully. Oil and replace with an extra nylon washer (A-23763P3), if there is sufficient clearance, so as to reduce end play to a minimum.

5. Noisy bearings. Noise caused by dirt and grit in bearings can usually be cured by careful cleaning of both shaft and bearing. If shaft or bearing is slightly scarred try smoothing off roughness with crocus cloth, if badly scarred, replace. Nylon washers help reduce bearing end-noise. Add 1 drop of #10 or 20 oil upon assembly.

6. Noises heard when the volume is turned up (i.e. coming from the loudspeaker) may be due to vibration of the first 12AY7 tube (V1) in the amplifier. This tube may be microphonic and excited into vibration by the motor. Check the motor isolation and try a new 12AY7 tube to effect a cure.

AMPLIFIER TESTS AND REPAIRS

1. Check all tubes, inspect wiring and play-record slide switch (M4) for poor or open connections.

2. Test all five jacks for open or shorted circuits. These jacks must not be grounded.

3. Refer to schematic for all voltage and resistance readings.

4. Test bias oscillator as follows: Connect an A.C. vacuum tube voltmeter across the erase head winding at the play-record-erase head socket. Due to frequency, use unshielded wiring. Place recorder in "Record" position. Voltage should be a minimum of 58 volts.

Check bias and erase frequency with a signal generator and scope. This should be 58 to 63KC.

Check bias voltage across play-record head winding at play-record-erase head socket.

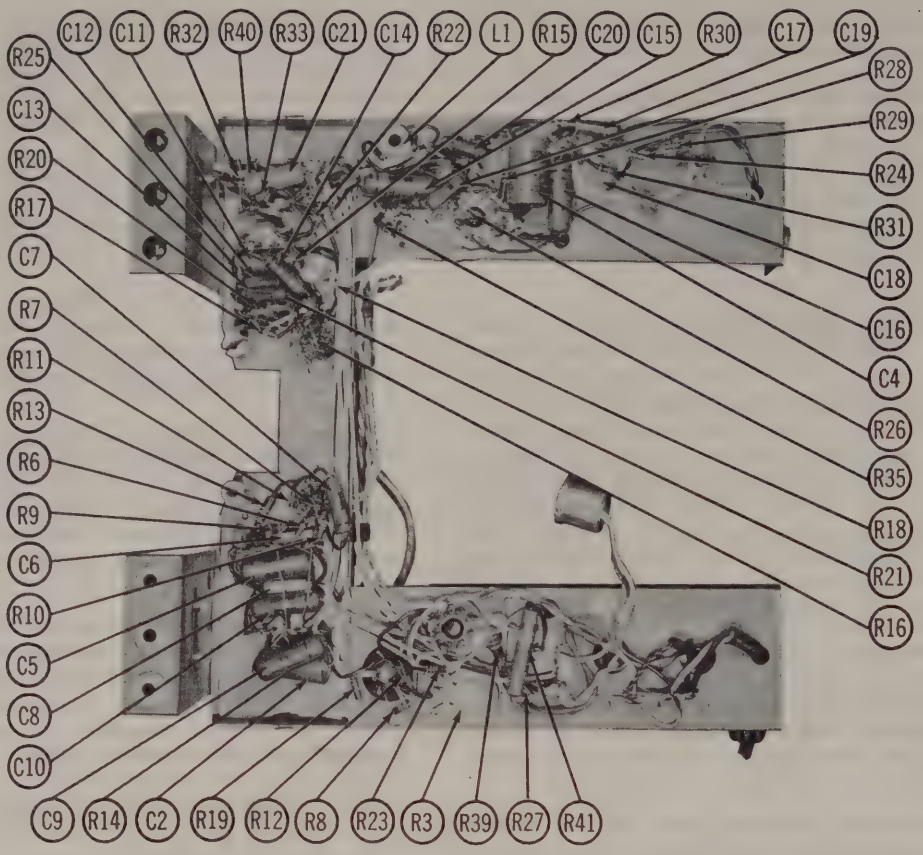
A. At 7 1/2 i.p.s. minimum of 35 volts.

B. At 3 3/4 i.p.s. minimum of 14 volts.

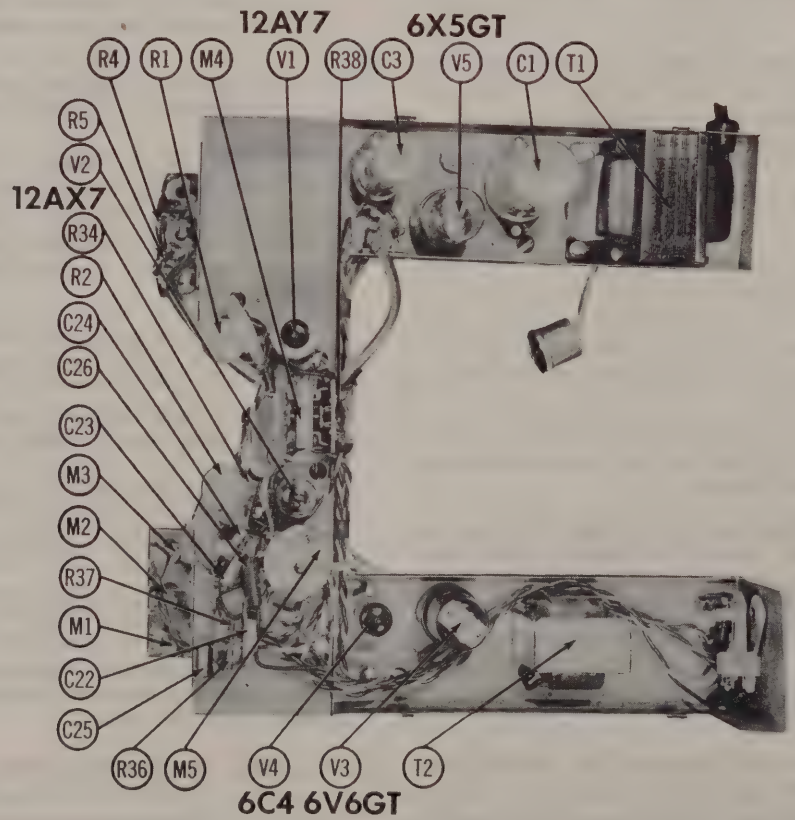
C. At 1 7/8 i.p.s. minimum of 10 volts.

5. The play-record-erase head may be tested for continuity if suspected of being open. The erase winding should be approximately 10 ohms and the play-record winding about 160 ohms.

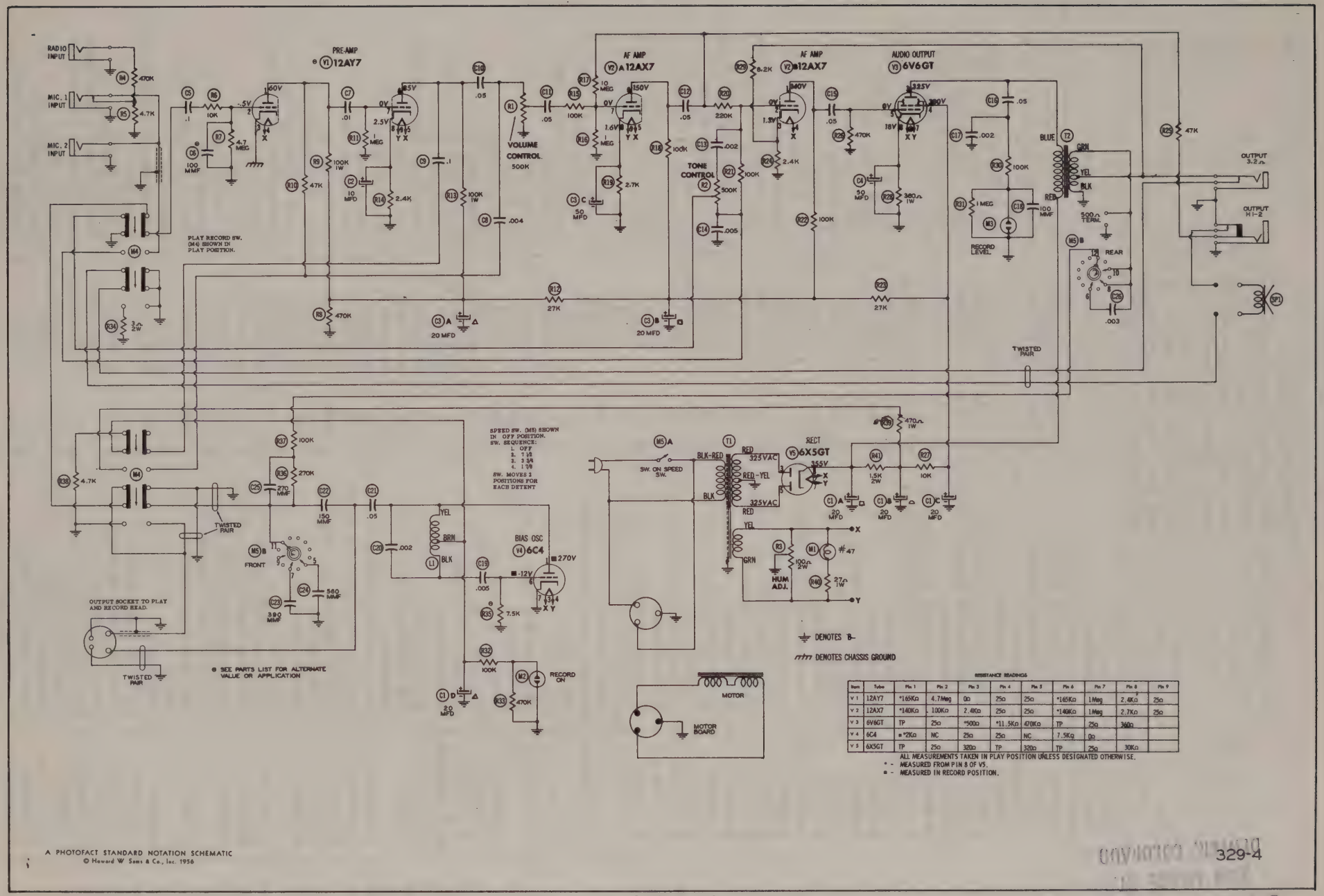
CAUTION: Whenever the head is tested for continuity it will become magnetized to some extent. Therefore, always demagnetize head after testing.



TOP VIEW OF AMPLIFIER.



BOTTOM VIEW OF AMPLIFIER.



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AY7	*165KΩ	4.7Meg	0Ω	25Ω	25Ω	*165KΩ	1Meg	2.4KΩ	25Ω
V 2	12AX7	*140KΩ	100KΩ	2.4KΩ	25Ω	25Ω	*140KΩ	1Meg	2.7KΩ	25Ω
V 3	6V6GT	TP	25Ω	*500Ω	*11.5KΩ	470KΩ	TP	25Ω	360Ω	
V 4	6C4	■ *2KΩ	NC	25Ω	25Ω	NC	7.5KΩ	0Ω		
V 5	6X5GT	TP	25Ω	320Ω	TP	320Ω	TP	25Ω	30KΩ	

ALL MEASUREMENTS TAKEN IN PLAY POSITION UNLESS DESIGNATED OTHERWISE.
* - MEASURED FROM PIN 8 OF V5.
■ - MEASURED IN RECORD POSITION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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MODEL RT-75 SCHEMATIC DIAGRAM.

MODEL RT-75

MECHANICAL PARTS LIST

IMPORTANT: When ordering parts always give the serial number and model of the unit that parts are being ordered for. The serial number is located on the grille at the rear of the case. It is most important that this number be given and that defective parts be returned when placing order, if possible.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	A-23628	Speed Control Pointer	37B	A-23558C	Speed Roller Spring
2	A-23628	Run and Stop Pointer	38	A-23852E	Speed Slide Roller Ass'y. - 3 3/4
3	C-23647D	Head Cover		A-23537B	Speed Roller (3 3/4 and 7 1/2)
4	C-23648D	Pressure Roller Cover	38A	A-23801P1C	Speed Slide Ass'y. - 3 3/4
5	D-23821A	Top Deck Plate Assembly	38B	A-23558C	Speed Roller Spring
6	B-23804J	Take-Up Reel Support Ass'y.	39	A-23853E	Speed Slide Roller Ass'y. - 7 1/2
7	A-23763P1B	Nylon Washer	39A	A-23801P2C	Speed Slide Ass'y. - 7 1/2
8	B-23805L	Take-Up Reel Support Ass'y.	39B	A-23558C	Speed Roller Spring
9	A-23866D	Clutch Plate Shaft Assembly	40	A-27041	Speed Slide Cam - 1 7/8
10	A-23763P1B	Nylon Washer	41	A-27042	Speed Slide Cam - 3 3/4
11	A-23561C	Brake Spring	42	A-27043	Speed Slide Cam - 7 1/2
12	B-23983	Major Brake Assembly	43	A-23762	Speed Change Shaft
	A-23578	Brake Pad	44	A-23803C	Speed Slide Brkt. Ass'y.
13	A-23663	Head Assembly		A-23538C	Damper Spring
	B-23712(P1)B	Play-Record-Erase Head	45	B-23970F	Control Arm Slide Ass'y.
	A-23528A	Head Bracket	46	A-23588D	Nut Control
	A-23530A	Head Adj. Plate	47	A-23568P2E	Control Arm Stop (left hand)
	A-23622	Head Adj. Pivot	48	A-23642C	Spring (Push Button)
	A-23621C	Head Spring	49	A-23568P1E	Control Arm Stop (right hand)
	A-23623A	Head Hold Down	50	A-23772A	Control Arm
	A-23529A	Head Spacer	51	A-23667A	Control Arm Latch Ass'y.
14	A-23822D	"Truarc" Retaining Ring	52	A-23668	Control Arm Stop Ass'y.
15	A-23636	Fiber Washer	53	A-23742A	Push Button Shaft Ass'y.
16	A-23659F	Pressure Pad Brkt. Ass'y.	54	A-23631A	Flange Arm
	A-23876E	Play-Record Pressure Pad Arm Assembly	55	A-27050B	Idler Pulley Drive Ass'y.
	A-23875E	Erase Pressure Pad Arm Assembly		A-27049	Drive Idler Brkt. Ass'y.
	A-25331A	Felt Pad		B-23952C	Drive Idler
17	A-23660A	Pressure Pad Brkt. Arm Assembly	56	B-27019	Cam, Off Arm
18	A-23562C	Pressure Pad Spring	57	B-23733B	Off Arm
19	A-23758	Slide Bearing	58	A-23854	Index Arm Assembly
20	A-23822D	"Truarc" Retaining Ring	59	B-23958B	Motor Mtg. Plate
21	A-23763P2B	Nylon Washer		B-20029P41	Motor Mtg. Grommet
22	A-23518P1E	Pressure Roller Assembly		A-23607A	Motor Mtg. Spacer
23	A-24000	Top Capstan Bearing Support Assembly	60	B-27026	Operating Cam Assembly
24	C-23655A	Top Plate Sub-Assembly	61	A-23546D	Cam Spring
25	A-23837D	Record Interlock Shaft Ass'y.		A-23842P1C	Spring Damper
	A-23764	Record Button	62	B-27029	Cam Arm Ass'y.
26	A-23758B	Slide Bearing	63	A-23583A	Cam Arm Lever
27	A-23657	Capstan Pressure Arm Assembly	64	A-23596C	Rewind Spring
28	A-23548C	Pressure Roller Spring	65	A-23597C	Fast Forward Spring
29	A-23790	Flywheel and Capstan Ass'y.	66	A-23860C	Rewind Idler Pulley Ass'y.
30	A-23515C	Pressure Roller Cam Ass'y.		A-23689E	Rewind Idler Brkt. Ass'y.
31		Record Safety Release Cam		A-23883C	Rewind Idler Pulley
32	A-23870	Ball Bearing - Flywheel Thrust	67	A-23661P2B	Rewind Belt
33	A-23761	Cam Shaft	68	A-23886B	Rewind Pulley
34	A-23681F	Reel Stand Assembly	69	A-23665F	Rewind Idler
35	A-23678D	Brake Lever Arm Ass'y.	70	C-23654G	Motor and Pulley Ass'y.
36	A-23697	Index Arm Spring		A-23634C	Motor Fan
	A-23842P3	Spring Damper	71	A-23862E	Fast Forward - Play Pulley Assembly
37	A-23851E	Speed Slide Roller Assembly - 1 7/8		A-23691C	Bracket Assembly
	A-23536B	Speed Roller (1 7/8)		A-23885D	Fast Forward - Play Idler
37A	A-23801P1C	Speed Slide Ass'y. - 1 7/8	72	B-23887C	Fast Forward Belt Pulley
			73	A-23662B	Take-Up Belt
			74	A-23843C	Idler Return Spring
			75	A-27044	Capstan Bottom Bearing Assembly

ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
V1	12AY7	12AY7, Pre-Amplifier	R8		Resistor, 470KΩ, 1/2 Watt
V2	12AX7	12AX7, AF Amplifier	R9		Resistor, 100KΩ, 1 Watt
V3	6V6GT	6V6GT, Audio Output	R10		Resistor, 47KΩ, 5%, 1/2 Watt
V4	6C4	6C4, Bias Osc.	R11		Resistor, 1Meg., 1/2 Watt
V5	6X5GT	6X5GT, Rectifier	R12		Resistor, 27KΩ, 1/2 Watt
C1A	B-20048P24	Elect. Cap., 20MFD. @ 450V.	R13		Resistor, 100KΩ, 1 Watt
C1B		Elect. Cap., 20MFD. @ 450V.	R14		Resistor, 2400Ω, 5%, 1/2 Watt
C1C		Elect. Cap., 20MFD. @ 450V.	R15		Resistor, 100KΩ, 1/2 Watt
C1D		Elect. Cap., 20MFD. @ 450V.	R16		Resistor, 1Meg., 1/2 Watt
C2	B-20053P5	Elect. Cap., 10MFD. @ 25V.	R17		Resistor, 10Meg., 1/2 Watt
C3A	B-20048P28	Elect. Cap., 20MFD. @ 450V.	R18		Resistor, 100KΩ, 1/2 Watt
C3B		Elect. Cap., 20MFD. @ 450V.	R19		Resistor, 2700Ω, 1/2 Watt
C3C		Elect. Cap., 50MFD. @ 50V.	R20		Resistor, 220KΩ, 1/2 Watt
C4	B-20053P25	Elect. Cap., 50MFD. @ 50V.	R21		Resistor, 100KΩ, 1/2 Watt
C5	B-20047P98	Cap., .1MFD. @ 200V.	R22		Resistor, 100KΩ, 1/2 Watt
C6♦	B-20049P7	Cap., 100MMF. @ 500V.	R23		Resistor, 27KΩ, 1/2 Watt
C7	B-20047P56	Cap., .01MFD. @ 400V.	R24		Resistor, 2400Ω, 5%, 1/2 Watt
C8	B-20047P24	Cap., .004MFD. @ 400V.	R25		Resistor, 47KΩ, 1/2 Watt
C9	B-20047P98	Cap., .1MFD. @ 200V.	R26		Resistor, 470KΩ, 1/2 Watt
C10	B-20047P81	Cap., .05MFD. @ 400V.	R27		Resistor, 10KΩ, 1/2 Watt
C11	B-20047P81	Cap., .05MFD. @ 400V.	R28		Resistor, 360Ω, 5%, 1 Watt
C12	B-20047P81	Cap., .05MFD. @ 400V.	R29		Resistor, 8200Ω, 1/2 Watt
C13	B-20047P17	Cap., .002MFD. @ 400V.	R30		Resistor, 100KΩ, 1/2 Watt
C14	B-20047P86	Cap., .005MFD. @ 400V.	R31		Resistor, 1Meg., 1/2 Watt
C15	B-20047P81	Cap., .05MFD. @ 400V.	R32		Resistor, 100KΩ, 1/2 Watt
C16	B-20047P81	Cap., .05MFD. @ 400V.	R33		Resistor, 470KΩ, 1/2 Watt
C17	B-20047P17	Cap., .002MFD. @ 400V.	R34		Resistor, 3Ω, 2 Watt
C18	B-20049P7	Cap., 100MMF. @ 500V.	R35*		Resistor, 7500Ω, 5%, 1/2 Watt
C19	B-20047P86	Cap., .005MFD. @ 400V.	R36		Resistor, 270KΩ, 1/2 Watt
C20	B-20047P17	Cap., .002MFD. @ 400V.	R37		Resistor, 100KΩ, 1/2 Watt
C21	B-20047P81	Cap., .05MFD. @ 400V.	R38		Resistor, 4700Ω, 1/2 Watt
C22	B-20049P98	Cap., 150MMF. @ 500V.	R39**		Resistor, 470Ω, 1 Watt
C23	B-20049P66	Cap., 390MMF. @ 500V.	R40		Resistor, 27Ω, 1 Watt
C24	B-20049P68	Cap., 560MMF. @ 500V.	R41		Resistor, 1500Ω, 2 Watt
C25	B-20049P64	Cap., 270MMF. @ 500V.	T1	B-20272	Power Transformer
C26	B-20047P92	Cap., .003MMF. @ 400V.	T2	B-20204	Audio Output Transformer
R1	B-20066P130	Volume Control, 500KΩ, 1/2 Watt	SP1	B-20111P28	6" x 9" P.M. Speaker, 3.2Ω
			L1	B-23704	Bias Osc. Coil
R2	B-20066P130	Tone Control, 500KΩ, 1/2 Watt	M1		Pilot Light, Type #47
R3	B-20066P72	Hum Adj. Cont., 100Ω, 2 Watt, W.W.	M2		Neon Lamp, NE51 (Record "On")
			M3		Neon Lamp, NE51 (Record Level)
R4		Resistor, 470KΩ, 1/2 Watt			
R5		Resistor, 4700Ω, 1/2 Watt	M4	B-23705C	Play-Record Switch
R6		Resistor, 10KΩ, 1/2 Watt	M5A	B-20033P7	On-Off Switch
R7		Resistor, 4.7Meg., 1/2 Watt	M5B		Speed Equalization Switch

♦ Some Models use a 470MMF. capacitor in this application, part #B-20049P87.

* Some Models use a 10KΩ, 1/2 Watt resistor in this application.

** Some Models use a 1500Ω 1 Watt resistor in this application.

DEWALD
MODEL K-701-A

DEWALD
MODEL K-701-A

TRADE NAME	Dewald Model K-701A
MANUFACTURER	Dewald Radio Mfg. Co., 35-15 37th Ave., Long Island City 1, N. Y.
TYPE SET	Battery Operated Portable Transistor AM Superheterodyne Receiver
POWER SUPPLY	9 Volt "A" Battery
RATING	7MA @ 9 Volts DC
TUNING RANGE—BROADCAST	540KC-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.005MFD	High side to antenna lug on tuning gang. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open	Across Voice Coil	A1, A2, A3	Adjust for maximum output.
2.		Loop	1650KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune to 1400KC signal	"	A5	"
4.		"	600KC	Tune to 600KC signal	"	A6	Adjust for maximum output while rocking tuning gang.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

DEWALD MODEL K-701A

TRANSISTORS

ITEM No.	USE	TYPE	NOTES
X1	Converter	830	
X2	1st IF Amplifier	2N145	Note 1
X3	2nd IF Amplifier	2N147	Note 2
X4	AF Amplifier	310	
X5	Output	353	
X6	Output	353	

Note 1. Type 2N146 or 2N147 may bw used in this application.
Note 2. Type 2N145 or 2N146 may be used in this application.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	DEWALD PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	100	15	E-216-2	SRE15V100	BBR100-15		TD-100-15		TVA-1160
C2	10	5	E-215-5	SRE25V10	BBR10-25		TD-10-25	MMT-0210	TE-1087
C3	10	5	E-215-3	SRE25V10	BBR10-25		TD-10-25	MMT-0210	TE-1087
C4	50	3	E-215-4	SRE3V50	BBR50-3		TD-50-6	MMT-350	TVA-1100

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	DEWALD PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C6	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C7	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C8	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C9	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C10	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C11	.8									Note 1
C12	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C13	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C14	5000			BPD-005	DD-502	K080	811-005	DC525	5HK-D5	
C15	.05	200		BPD-05	DF-503	CUB2S5		PT415	2TM-S5	

Note 1. Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	DEWALD PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	5000Ω	½	V310-2	AB-11		Q13-114	U12	Volume (Note 1)
B	Shaft		Not Req.	AK-4		Not Req.	Not Req.	Attach to R1A.
C	Switch		Not Req.	KB-1		76-1	US-26	Attach to R1A.

Note 1. Some versions will use an alternate control Part No. V310-1 in this application.

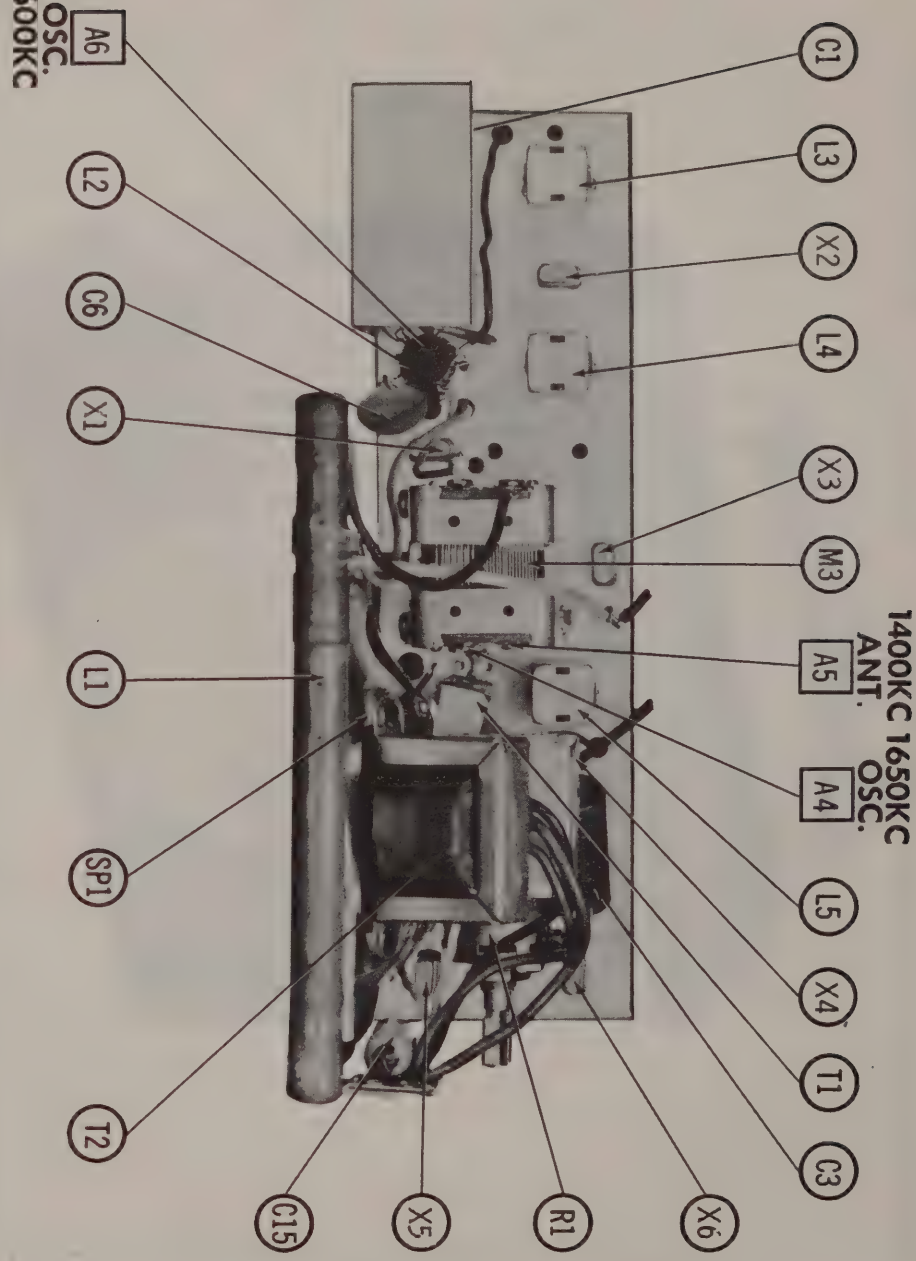
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DEWALD PART No.	IRC PART No.	
R2	100K			BTS-100K	
R3	470Ω			BTS-470	
R4	2200Ω			BTS-2200	
R5	4700Ω			BTS-4700	
R6	330Ω			BTS-330	
R7	47K			BTS-47K	
R8	6800Ω			BTS-6800	
R9	220Ω			BTS-220	
R10	470Ω			BTS-470	
R11	100K			BTS-100K	
R12	2200Ω			BTS-2200	
R13	6800Ω			BTS-6800	
R14	33K			BTS-33K	
R15	100Ω			BTS-100	
R16	1000Ω			BTS-1000	
R17	82Ω			BTS-82	Note 1
R18	4700Ω			BTS-4700	
R19	10Ω			BTS-10	

Note 1. Some versions use 68Ω in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO DRIVER)

ITEM No.	Resistance		REPLACEMENT DATA						NOTES
	PRI.	SEC.	DEWALD PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	310Ω	168ΩCT	T129						
	Turns Ratio								
	2:1								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	DEWALD PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	825Ω	3-4Ω	38083-1						

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	DEWALD PART No.	QUAM PART No.	RCA TYPE No.	
SP1	4"	PM	3-4Ω	S-710-2	4A07	223S1	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	DEWALD PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Stick	1Ω	.1Ω	L-130C	14-9013			
L2	Osc. Coil	1.6Ω	3.5Ω*	0-1338-3	14-9014			* Tapped @ .2Ω
L3	1st IF Trans.	8.5Ω■	.4Ω	1-131-1	16-9012			■ Tapped @ 6.2Ω
L4	2nd IF Trans.	10Ω ▲	.4Ω	1-131-1	16-9013			▲ Tapped @ 6.2Ω
L5	3rd IF Trans.	8.5Ω†	.7Ω	1-131-2	16-9014			† Tapped @ 6.5Ω

BATTERIES

ITEM No.	VOLTAGE	DEWALD PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	9V "A"		#276						

CRYSTAL DIODES

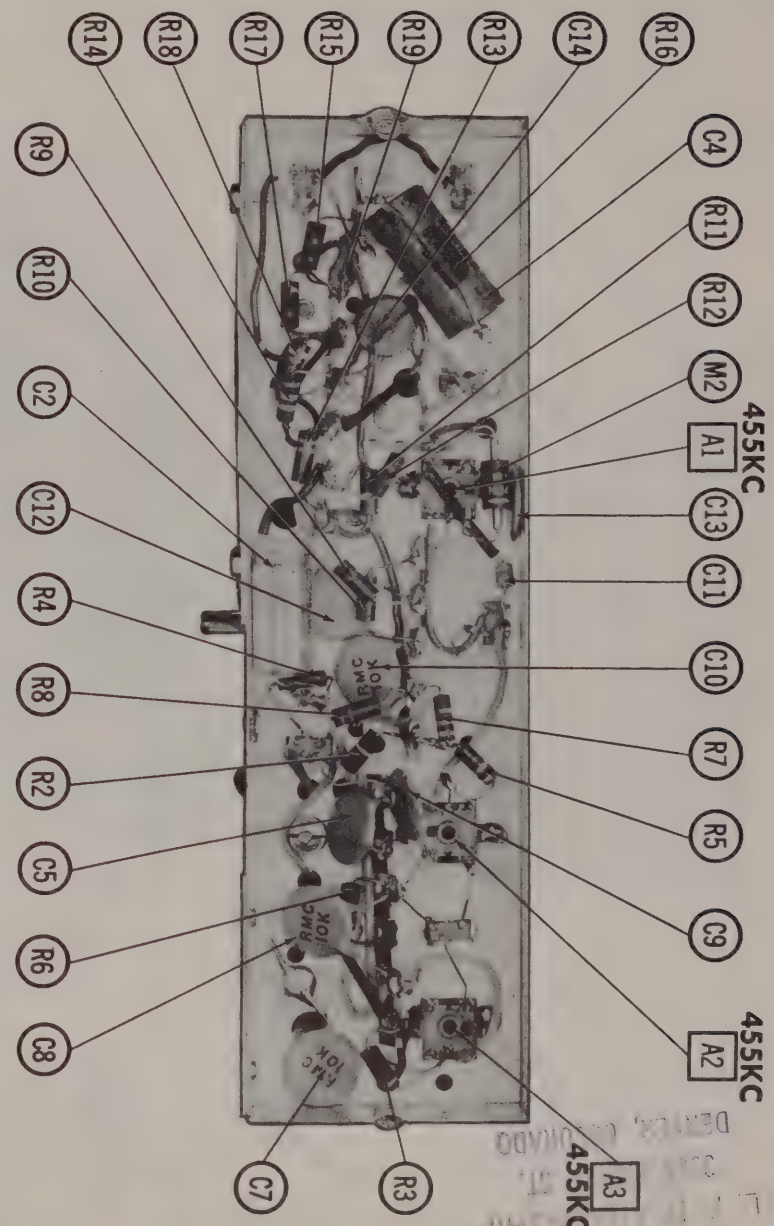
ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		DEWALD PART No.	SYLVANIA PART No.	
M2	1N64*	1N295 or 1N64	1N60	Audio Det. (Pigtail)

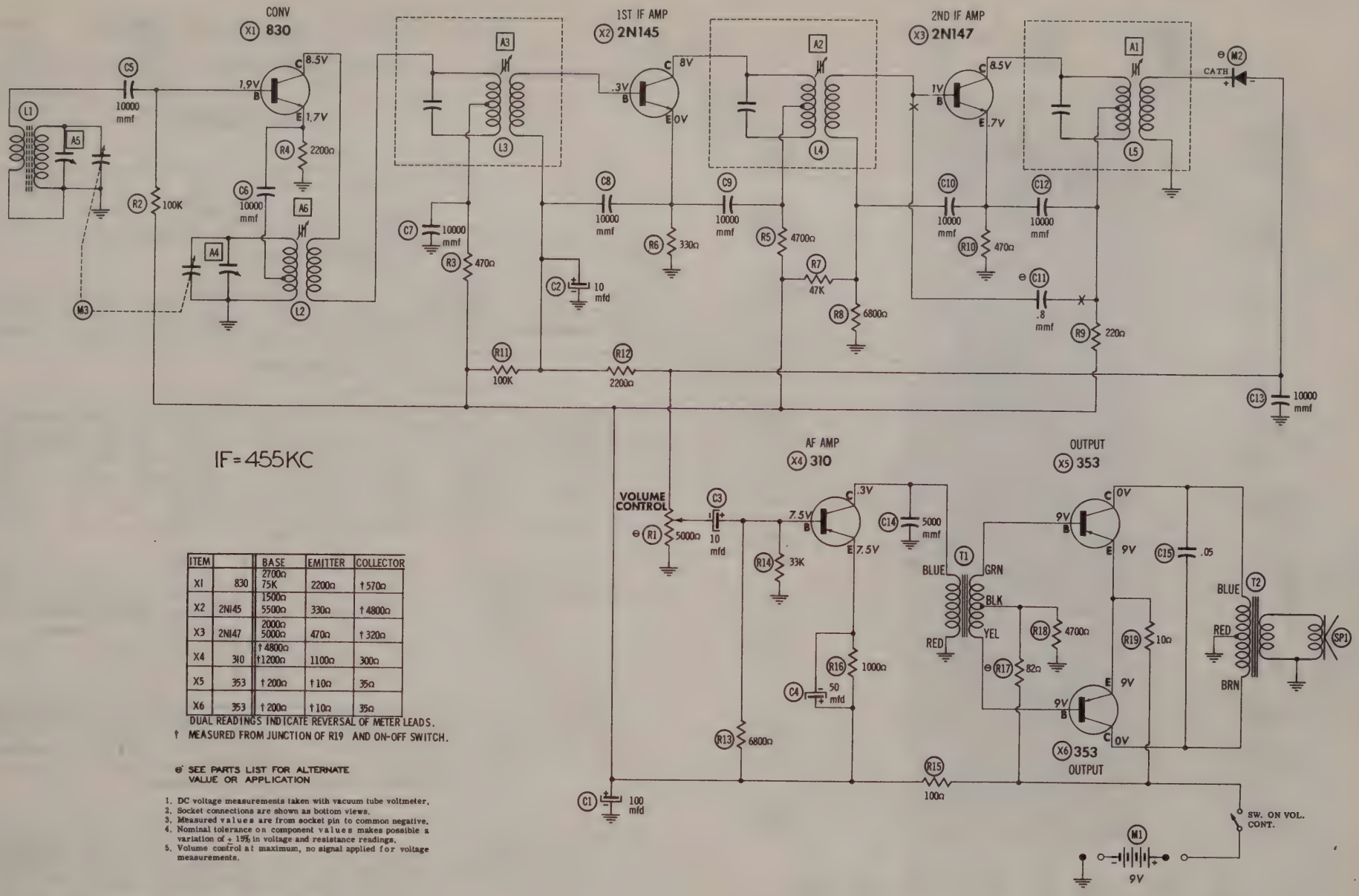
* Some versions may use crystal diode type 1N295 in this application.

MISCELLANEOUS

ITEM No.	PART NAME	DEWALD PART No.	NOTES
M3	Tuning Cap.	V-214-1	2 Gang (16-220MMF, 22-120MMF)
	Cabinet	4196C-4	
	Knob	4197	On-Off-Volume
	Knob	4228D	Tuning

CHASSIS—BOTTOM VIEW





ITEM		BASE	EMITTER	COLLECTOR
X1	830	2700Ω 75K	2200Ω	†570Ω
X2	2N145	1500Ω 5500Ω	330Ω	†4800Ω
X3	2N147	2000Ω 5000Ω	470Ω	†320Ω
X4	310	†4800Ω †1200Ω	1100Ω	300Ω
X5	353	†200Ω	†10Ω	35Ω
X6	353	†200Ω	†10Ω	35Ω

DUAL READINGS INDICATE REVERSAL OF METER LEADS.
† MEASURED FROM JUNCTION OF R19 AND ON-OFF SWITCH.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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FIRESTONE
MODEL 4-A-131 (Code 1-5-3A7, U)

FIRESTONE
MODEL 4-A-131 (Code 1-5-3A7, U)

FIRESTONE
MODEL 4-A-131 (Code 1-5-3A7, U)

TRADE NAME	Firestone Model 4-A-131 (Code 1-5-3A7, U)
SUPPLIER	Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron, Ohio
TYPE SET	AC Operated Phono Amplifier with 3 Speed Automatic Record Changer
TUBES (Three)	Types 12AU6 AF Amplifier, 50C5 Output, 35W4 Rectifier
POWER SUPPLY	105-120 Volts AC-60 Cycles RATING .22 Amp. @ 117 Volts AC

FOR SERVICE INFORMATION ON RECORD CHANGER—SEE SIMILAR V-M MODEL 954B—PHOTOFACT SET 302—FOLDER 12

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amplifier	12AU6	
V2	Output	50C5	
V3	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	FIRESTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	40	150		PRS150V4040-20	BBRT44215	TCT3116	TDLT-4	FMT-315	TVA-3448
B	40	150							
C	20	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	FIRESTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.05	200	CP-503-2	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C3A	1500		†	†PA443	DD-152	K071		DC5215	5HK-D15	
B	200				DD-201	G050		UC-532	5GA-T2	
C	1000				DD-102	K089		DC521	5HK-D1	
D	7000				D6-682	K081		MC469	5HK-D68	
C4	.1	200	CP-103-2	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C5	.05	200	CP-503-2	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C6	.05	200	CP-503-2	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	

† Items C3A, C3B, C3C, C3D, R5A, R5B, R5C, and R5D are combined in one unit.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	FIRESTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	3.2Meg	½	VC-76	AB-85	A47-3Meg-Z	Q13-140	U-57	Volume
B	Shaft		Not Req.	AK-4	KSS-3	Not Req.	Not Req.	Attach to R1A.
R2A	7500Ω	½	VC-75	AB-13	A47-7500-S	Q11-115	U-26	Tone
B	Shaft		Not Req.	AK-4	KSS-3	Not Req.	Not Req.	Attach to R2A.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	FIRESTONE PART No.	IRC PART No.	
R3	1.5Meg		RC-332-1	BTR-1.5Meg	
R4	3300Ω			BTS-3300	
R5A	4.7Meg		†	BTS-4.7Meg	
B	500K			BTS-470K	
C	4.7Meg			BTS-4.7Meg	
D	500K			BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	FIRESTONE PART No.	IRC PART No.	
R6	150Ω		RC-151-1	BTS-150	
R7	10K		RC-103-1	BTS-10K	
R8	330Ω	2	RC-331-7	BTB-330	
R9	2000Ω 5%			BTS-2200	
R10	22Ω	1	RC-220-4	BTA-22	
R11	130Ω	10	RW-131	1 3/4A-125	

† Items R5A, R5B, R5C, R5D, C3A, C3B, C3C, C3D are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	FIRESTONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2.4KΩ	3-4Ω	TR-114	Z1101	A-3025	A-3332	26858	S-12X	

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	FIRESTONE PART No.	QUAM PART No.	RCA TYPE No.	
SP1	4"x 6"	PM	3-4Ω	SP-48	46A07	246S2	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	FIRESTONE PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		55-T	GD-J	47	0-1 or S-1 and 0-3	

ASTATIC AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

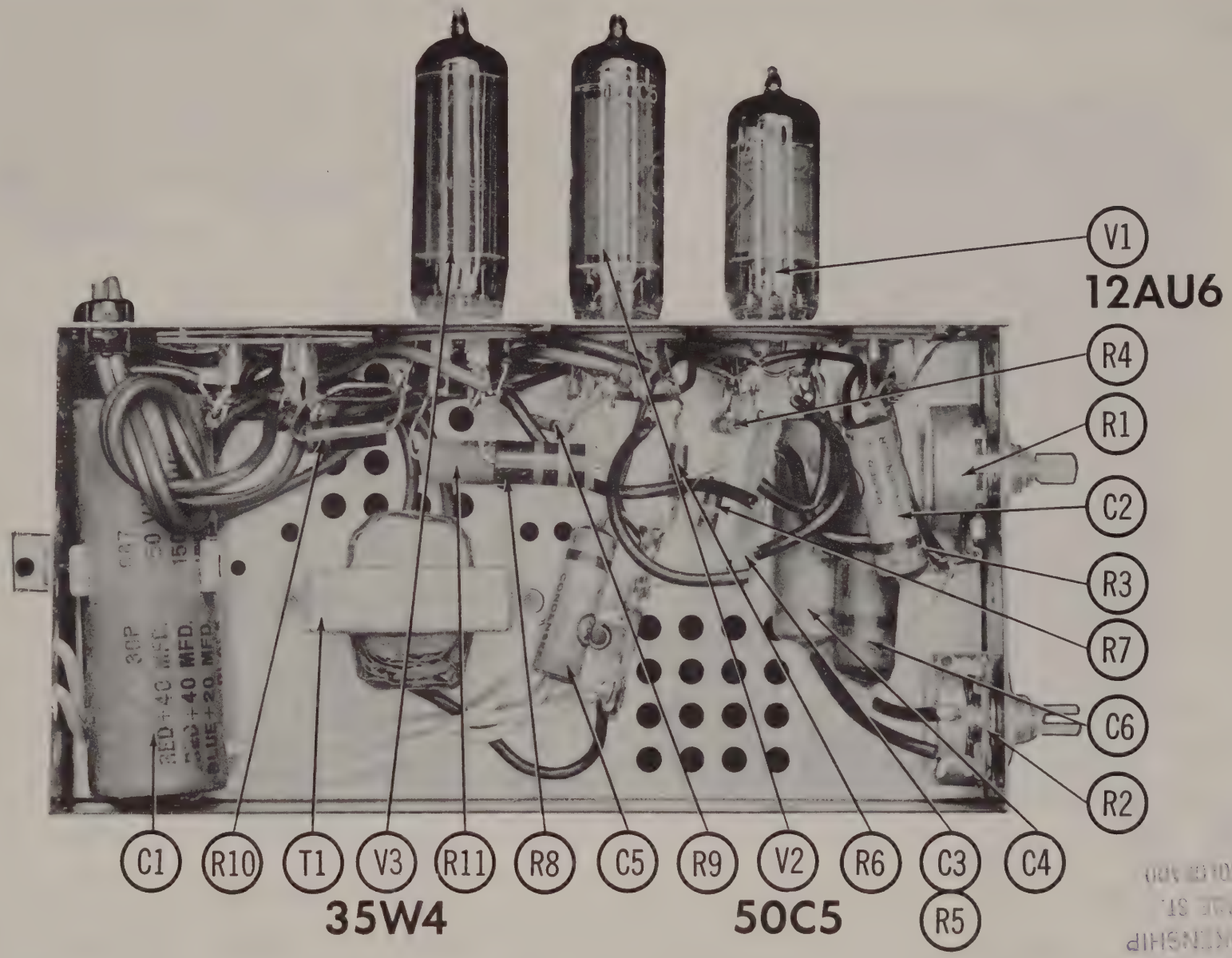
PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA				REMARKS
	FIRESTONE PART No.	JENSEN PART No.	FIDELITONE PART No.	WALCO PART No.	
M2		* S-67 or † S-66 or ♦† S-66SD or ♦ S-66D	† AC-434 or ♦† AC-434D1 or †♦ AC-434D2 or ♦ AC-434D	† W-75TPS or ♦† W-75DS or ♦ W-75TPD	* Metal † Jewel ♦ Diamond

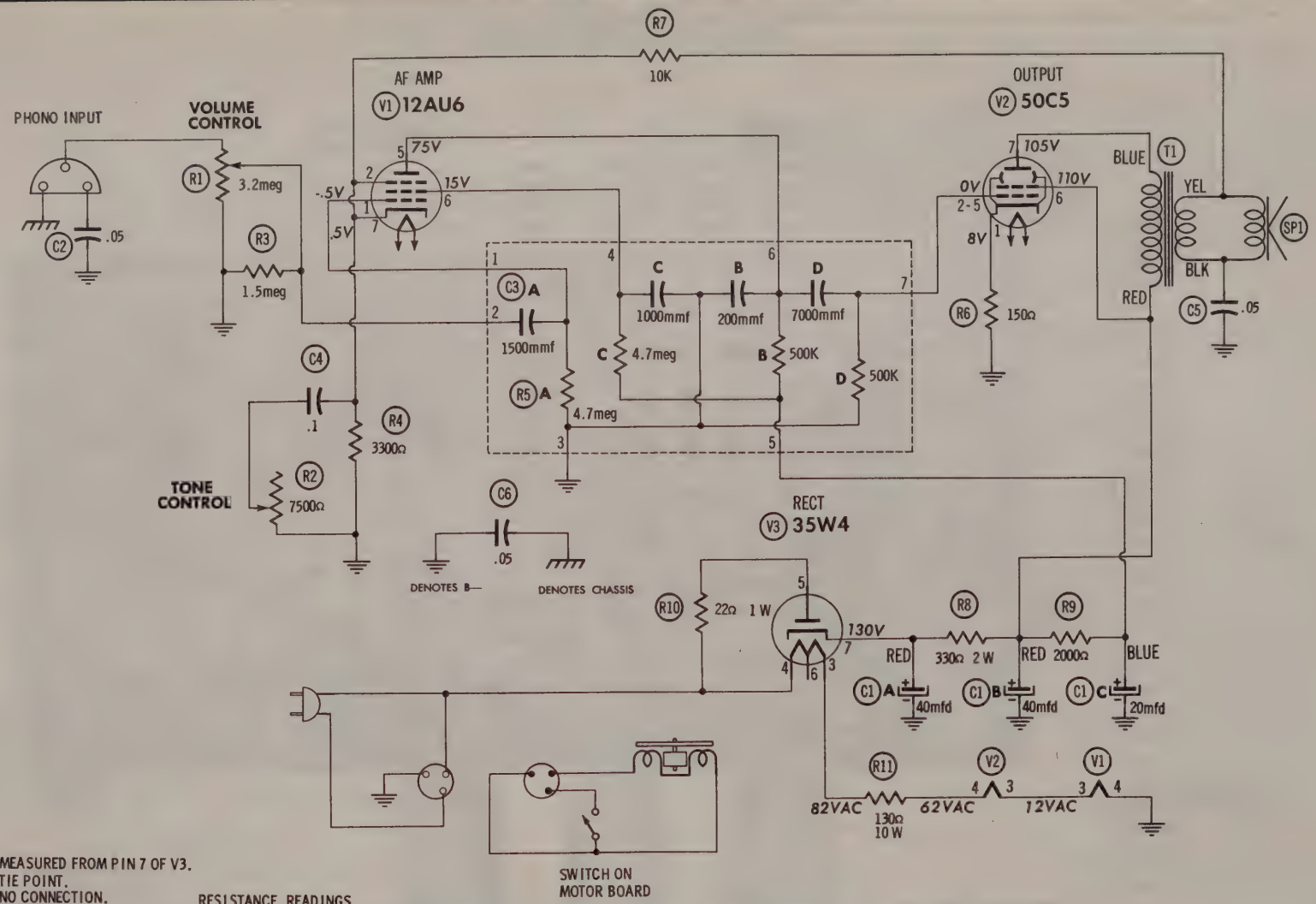
MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
	Case	CA-1024	
	Knob	KN-330V	Volume
	Knob	KN-330T	Tone



CHASSIS BOTTOM VIEW

PROPERTY OF
L. F. DUMONT SHIP
3924 TIMPLE ST.
DENVER, COLO. 2080



† MEASURED FROM PIN 7 OF V3.
TP TIE POINT.
NC NO CONNECTION.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12AU6	4.7meg	3.3KΩ	12Ω	0	†500KΩ	†4.7meg	3.3KΩ
V2	50C5	150Ω	500KΩ	12Ω	24Ω	500KΩ	†330Ω	†550Ω
V3	35W4	TP	NC	150Ω	180Ω	200Ω	165Ω	18KΩ

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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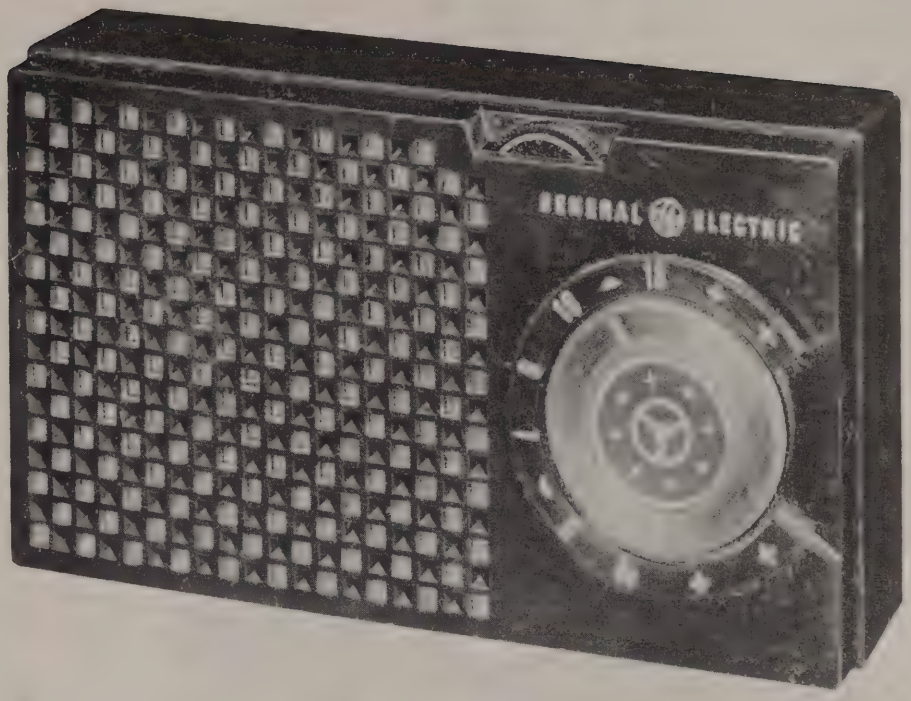
GENERAL ELECTRIC
MODELS 675, 676



GENERAL ELECTRIC
MODELS 675, 676

TRADE NAME General Electric Models 675, 676
MANUFACTURER General Electric Co., Electronics Dept., Electronics Park, Syracuse, N. Y.
TYPE SET Battery Operated Portable Transistor AM Superheterodyne Receiver
POWER SUPPLY RATING 4.5 Volts DC & 13.5 Volts DC in Pack Form with Common Positive Terminal
. 36MA ⓐ -4.5 Volts DC & 5MA ⓑ -13.5 Volts DC

TUNING RANGE—BROADCAST 540KC-1620KC

ALIGNMENT INSTRUCTIONS

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.		Loop	455KC (400~ Mod.)	Tuning gang fully open	Across Voice Coil	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.		"	1620KC	"	"	A4	"
3.		"	1500KC	Tune to 1500KC signal	"	A5	Adjust for maximum output while rocking tuning gang.
4.		"	600KC	Tune to 600KC signal	"	A6	"

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PARTS LIST AND DESCRIPTIONS

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSISTORS

ITEM No.	USE	TYPE	NOTES
X1	Converter	2N136	Note 1
X2	1st IF Amplifier	2N137	Note 1
X3	2nd IF Amplifier	2N135	
X4	Detector	2N78	
X5	Output	2N44	

Note 1. Type 2N135 used in late production versions.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	G. E. PART No.	QUAM PART No.	RCA TYPE No.	
SP1	2 3/4"	PM	16Ω	ROP-034		222SI	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	G. E. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	8	15	RCE-225	XPP15V10	EC8-15	TAP30-8	ML-8-15		TE-1155
C2	20	8	RCE-226	XPP10V20		TAP10-20	ML-20-12		TE-1118

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	G. E. PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Stick	1.9Ω	.1Ω	RLL-066				
L2	Osc. Coil	1.7Ω	7.2Ω*	RLC-138				* Tapped @ .6Ω
L3	1st IF Trans.	2.4Ω	2.1Ω	RTL-188				
L4	2nd IF Trans.	2.4Ω	2.1Ω	RTL-189				
L5	3rd IF Trans.	2.4Ω	2.1Ω	RTL-190				

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	G. E. PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	10000		RCW-3186	BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C4	10000		RCW-3186	BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C5	5000		RCW-3014	BPD-005	DD-502	K080	811-005	DC525	5HK-D5	
C6	560		RCG-011	1464-00056	D6-561	1R5T56	811-561		MS-356	
C7	10000		RCW-3186	BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C8	10000		RCW-3186	BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C9	68			NPO-SI68	TCZ-68	TZ26	NPO-337-680			Note 1
C10	560		RCG-012	1464-00056	D6-561	1R5T56	811-561		MS-356	
C11	10000		RCW-3186	BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C12	750		RCG-013	1464-00075		1R5T75	811-751		MS-375	
C13	50000		RCW-3242	BPD-05						
C14	10000		RCW-3186	BPD-01	DD-103	K082	811-01	DC511	5HK-SI	

Note 1. Some versions may use 82MMF in this application (Part No. RCG-014).

BATTERIES

ITEM No.	VOLTAGE	G. E. PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	-4. 5V & -13. 5V "A"		239			XX9			

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		G. E. PART No.	SYLVANIA PART No.	
M2	1N64 *	RED-001	1N60	Audio Det. (Pigtail) Used in late production versions only.

* Some versions may use crystal diode type 1N87G in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	G. E. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/2	RRC-351					Volume & Switch

MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M3	Tuning Cap.	RCT-096	2 Gang
	Cabinet	RAU-458	Model 675
	Cabinet	RAU-459	Model 676
	Knob	RDK-532	Tuning
	Knob	RDK-533	On-Off-Volume
	Knob	RDK-534	On-Off-Volume

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

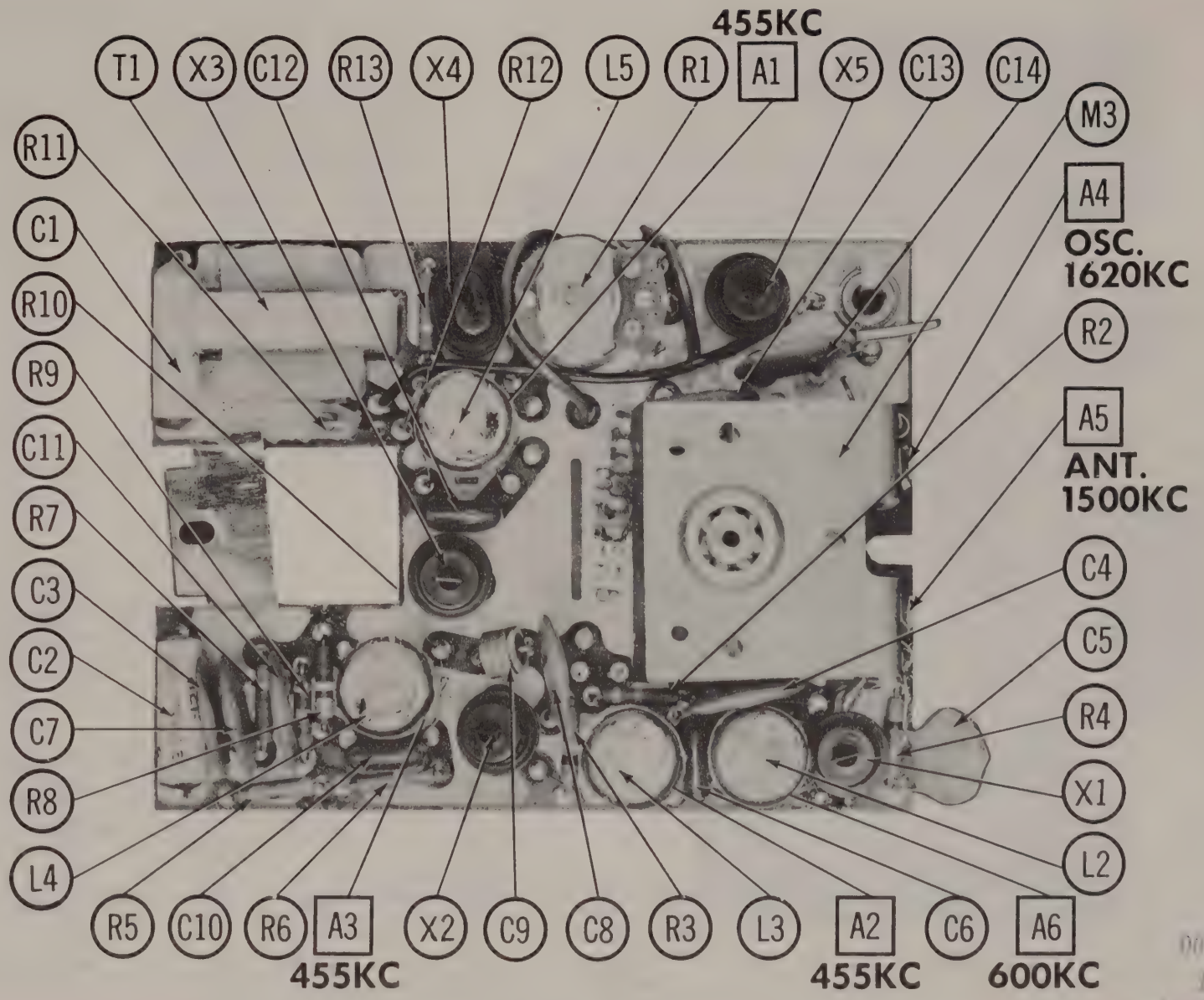
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	G. E. PART No.	IRC PART No.	
R2	27K		RRH-006	BTR-27K	
R3	100K		RRH-097	BTR-100K	
R4	1000Ω		RRH-012	BTR-1000	
R5	6800Ω		RRH-005	BTR-6800	
R6	220K		RRH-007	BTR-220K	
R7	2700Ω		RRH-003	BTR-2700	
R8	560K		RRH-002	BTR-560K	
R9	12K		RRH-004	BTR-12K	
R10	See Note				Note 1
R11	27K			BTR-27K	Note 2
R12	220Ω		RRH-009	BTR-220	
R13	2700Ω		RRH-003	BTR-2700	

Note 1. Replacement of X1, X2 or X3 may require changing the value of R10 which must be obtained experimentally. When replacing this resistor, first check the battery to be sure it is delivering full voltage. Start with a value of 470Ω. If receiver regenerates, try next lower value resistor. Use the value just below the lowest value where regeneration occurs. (A calibrated 500Ω potentiometer may be used).

Note 2. Some versions use 47K in this application. (Part No. RRH-008). Early production models use 39K in this application. When a crystal detector is used, a 22K resistor is used in this application.

TRANSFORMER (AUDIO OUTPUT)

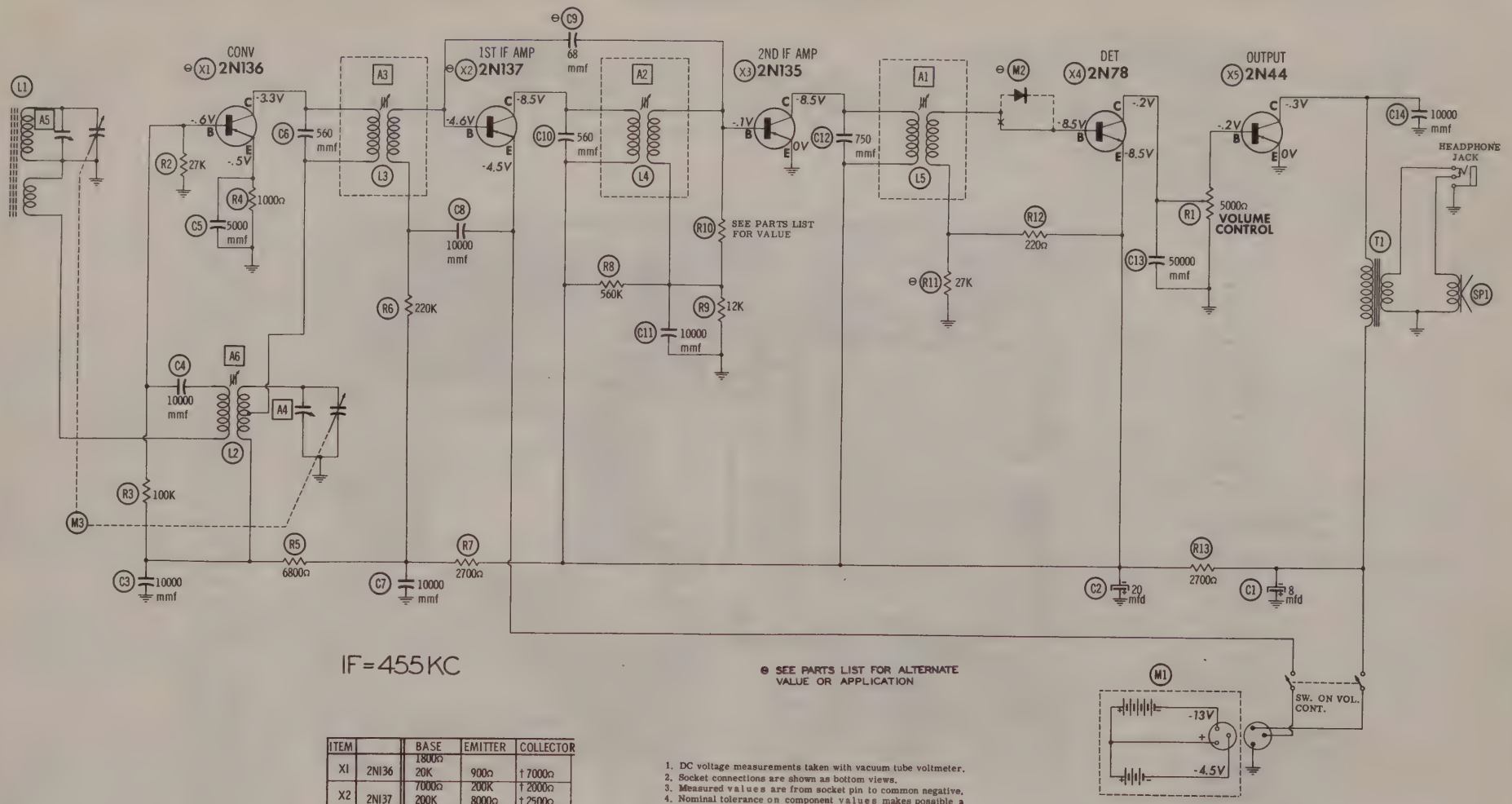
ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	G. E. PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2.5KΩ	16Ω	RTO-182						



CHASSIS TOP VIEW

GENERAL ELECTRIC
MODEL 675

SET 329 FOLDER 7



IF = 455 KC

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

ITEM		BASE	EMITTER	COLLECTOR
X1	2N136	1800Ω 20K	900Ω	†7000Ω
X2	2N137	7000Ω 200K	200K 8000Ω	†2000Ω †2500Ω
X3	2N135	800Ω 11K	0Ω	†2000Ω †2500Ω
X4	2N78	†2700Ω	†2300Ω	3800Ω 500Ω
X5	2N44	500Ω 3800Ω	0Ω	†110Ω

DUAL READINGS INDICATE REVERSAL OF METER LEADS.
† MEASURED FROM NEGATIVE SIDE OF C1.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

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HARMAN-KARDON
MODEL D-1100

HARMAN-KARDON
MODEL D-1100

TRADE NAME	Harman-Kardon Model D-1100	
MANUFACTURER	Harman-Kardon, Inc., 520 Main St., Westbury, L.I., N.Y.	
TYPE SET	AC Operated FM-AM Superheterodyne Receiver	
TUBES	Sixteen	
POWER SUPPLY	105-125 Volts AC-60 Cycles	RATING 1.3 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	530KC-1650KC	FREQ. MOD. 88MC-108MC

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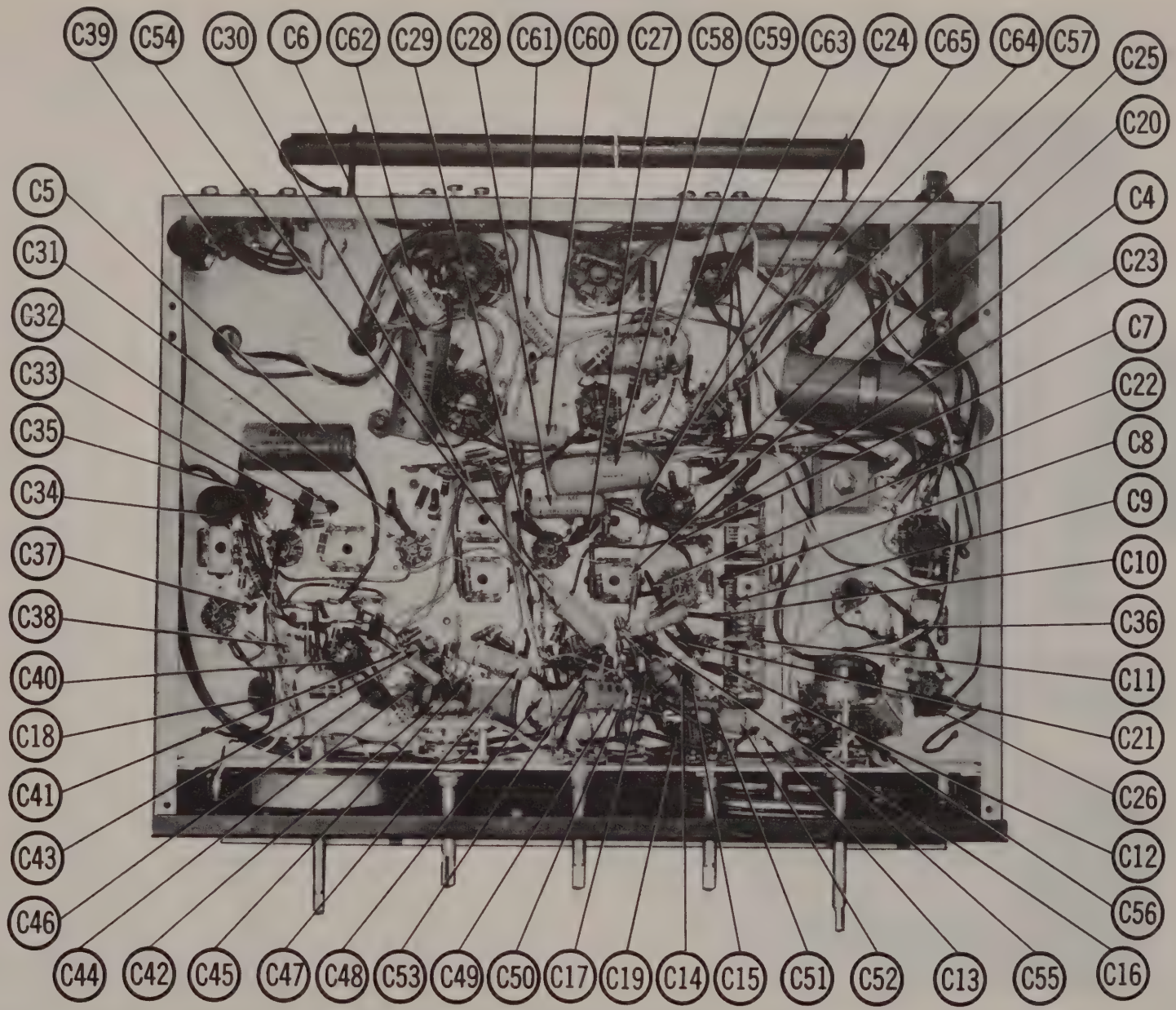
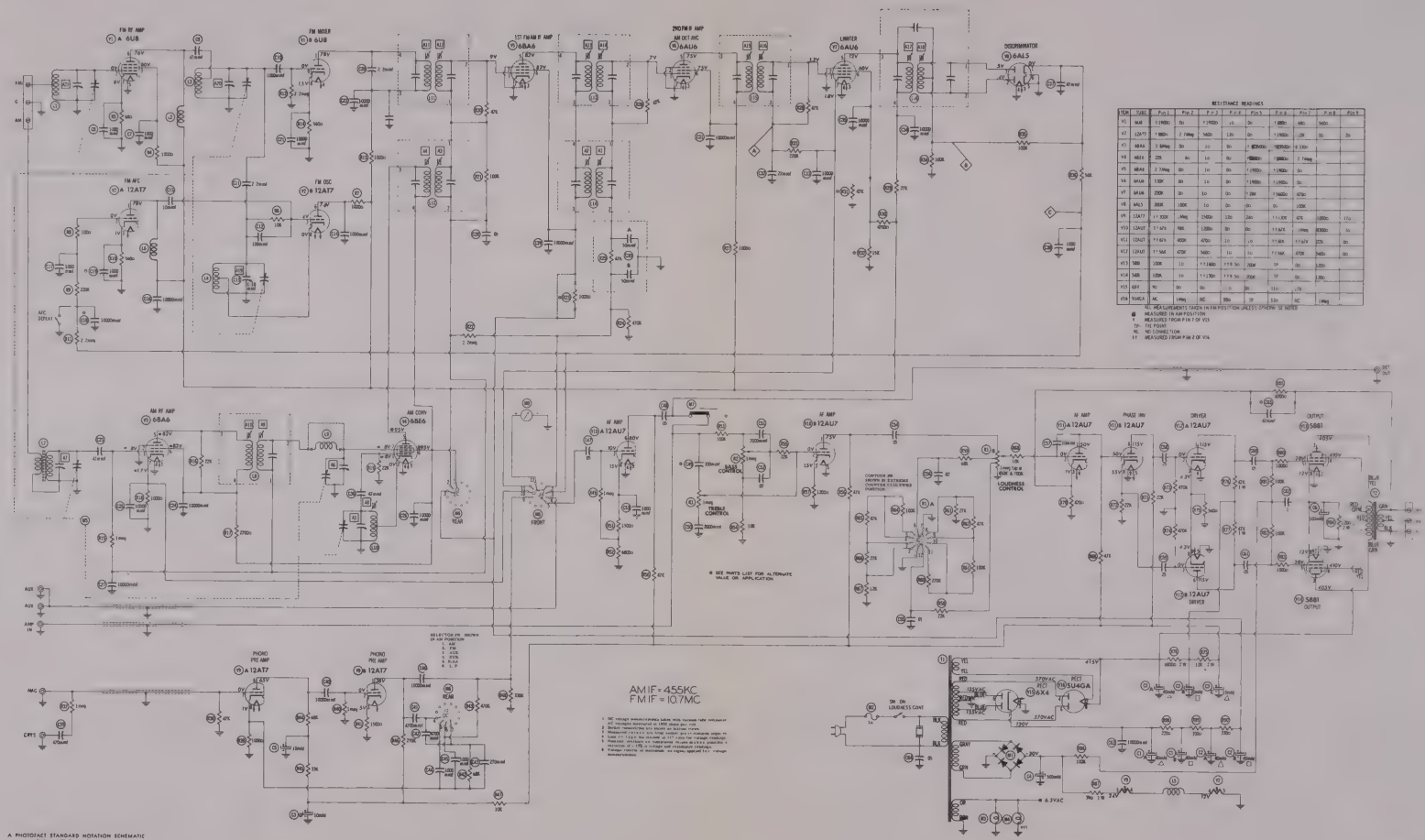


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION


FM RF AMP
FM MIXER
FM OSC
FM AFC
AM RF AMP
AM CONV
AM OSC
1ST FM-AM IF AMP
2ND FM-AM IF AMP
AM DET AVC
LIMITER
DISCRIMINATOR
AF AMP
AF AMP
PHASE INV
DRIVER
OUTPUT
TREBLE CONTROL
BASS CONTROL
LOUDNESS CONTROL
PHONO PRE AMP
PHONO PRE AMP
SW ON LOUDNESS CONT
RECT
AM IF = 455KC
FM IF = 10.7MC
* SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
RESISTANCE READINGS
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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329-8

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (grid) of 6BE6 (V4). Low side to chassis.	455KC (400∿Mod)	AM	Tuning gang fully open	Across output terminals.	A1, A2, A3, A4	Adjust for maximum deflection.
2.	200MMF	High side to AM antenna terminal. Low side to chassis.	1500KC	"	1500KC	"	A5, A6, A7	"
3.	"	"	600KC	"	600KC	"	A8, A9, A10	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Use a 100KΩ resistor in series with DC probe.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 9 (grid) of 6U8 (V1). Low side to chassis.	10.7MC (Unmod)	FM	Point of non-interference	DC probe thru 100KΩ to point Ⓐ. Common to chassis.	A11, A12, A13, A14, A15, A16	Adjust for maximum deflection.
5.	"	"	"	"	"	DC probe thru 100KΩ to point Ⓑ. Common to chassis.	A17	"
6.	"	"	"	"	"	DC probe thru 100KΩ to point Ⓒ. Common to chassis.	A18	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.
Use 100KΩ resistor in series with vertical amplifier.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 9 (grid) of 6U8 (V1). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. thru 100KΩ to point Ⓐ. Low side to chassis.	A11, A12, A13, A14, A15, A16	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
5.	"	"	"	"	"	Vert. Amp. thru 100KΩ to	A17	"

FIG. 1

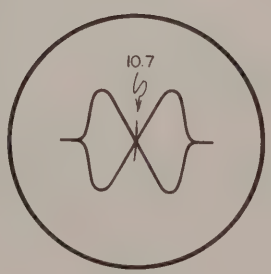
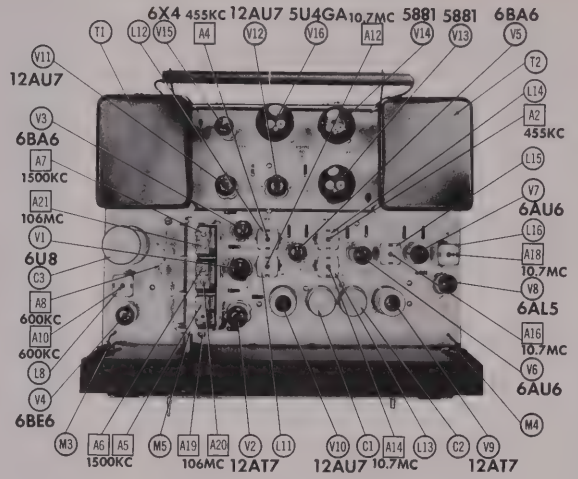
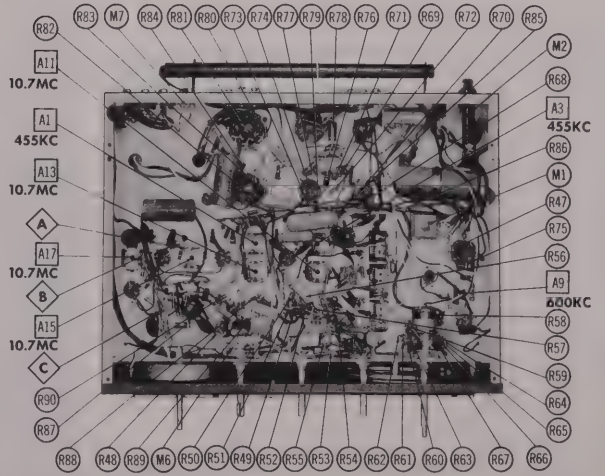


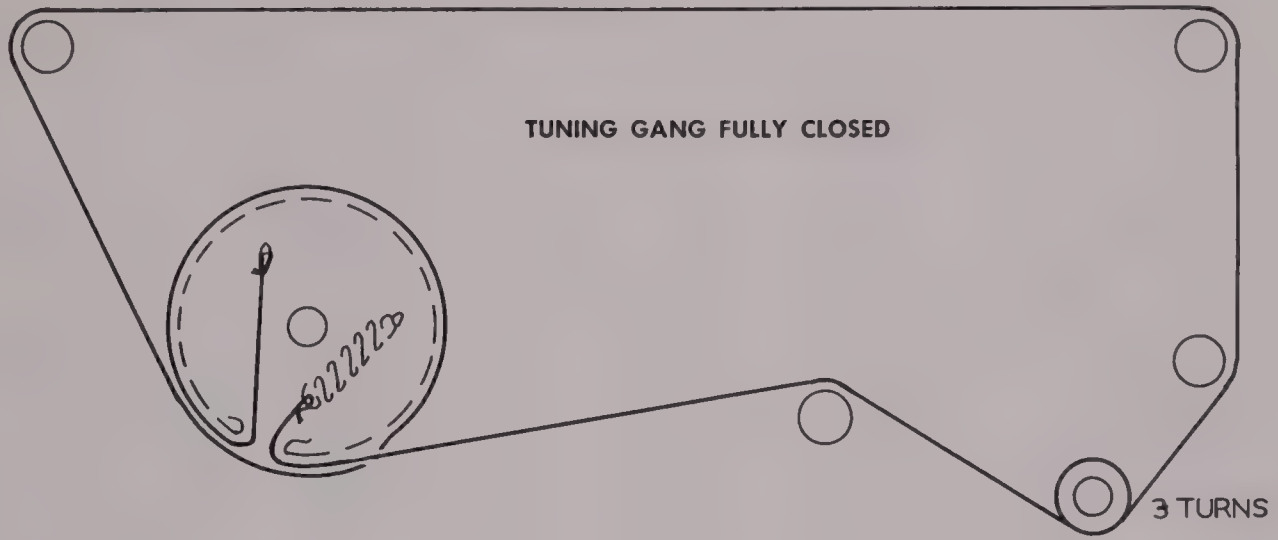
FIG. 2

CHASSIS - TOP VIEW



CHASSIS BOTTOM VIEW - RESISTOR & ALIGN. IDENT.





DIAL CORD DRIVE

PARTS LIST AND DESCRIPTIONS
TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM RF Amp. -FM Mixer	6U8	
V2	FM Osc. -FM AFC	12AT7	
V3	AM RF Amplifier	6BA6	
V4	AM Converter	6BE6	
V5	1st IF Amplifier	6BA6	
V6	2nd FM IF Amplifier- AM Det. -AVC	6AU6	
V7	Limiter	6AU6	
V8	Discriminator	6AL5	

ITEM No.	USE	TYPE	NOTES
V9	Phono Preamplifier	12AT7	
V10	AF Amplifier	12AV7	
V11	AF Amp. -Phase Inv.	12AV7	
V12	Driver	12AV7	
V13	Output	5881	
V14	Output	5881	
V15	Rectifier	6X4	
V16	Rectifier	5U4GA	

ELECTROLYTIC CAPACITORS

ITEM No	RATING CAP	RATING VOLT	REPLACEMENT DATA Harman-Kardon PART No	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲ 40	150	JE22637	AFH2-14	XB002	FP212	TMD-11	D-060	TVL-2428
B	■ 40	150							
C2A	▲ 40	150	JE22637	AFH2-14	XB002	FP212	TMD-11	D-060	TVL-2428
B	■ 40	150							
C3A	▲ 40	475	JE33905	AFH4-19-50	C040	FP476	TM-4141	Q-075	TVL-4840
B	■ 20	475			BR2050				
C	▲ 10	475							
D	10	475							
C4	500	50	JE531213	PRS50V500	BRH5050			S-060	TVL-1330
C5	10	450		PRS450V10	BR1045	TC72	TD-10-450	FM-4510	TVA-1705
C6	100	50		PRS50V100	BRH501	TC3501	TD-100-50	MTH-5010	TVA-1310

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Harman-Kardon PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C7	1000			BPD-001	DD-102	K069	801-001	DC521	5HK-SI	
C8	1000			BPD-001	DD-103	K069	801-001	DC521	5HK-SI	
C9	47			BPD-000047	DD-470	G033	831-470	UC-5447	5GA-Q47	
C10	1000			BPD-001	DD-102	K069	801-001	DC521	5HK-DI	
C11	2, 2			NPO-SI2, 2	TCZ-2R2	TZ05	NPOA-2R2		5TCCB-V22	
C12	100			N750-DI00	TCN-100	N042	N750L-101	NT-531	5TCU-T1	
C13	1-10									
C14	1000			BPD-001	DD-102	K069	801-001	DC521	5HK-DI	
C15	10			N750-DI10	TCN-10	N018	NPOA-100	NT-541	5TCU-Q1	
C16	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C17	1000			BPD-001	DD-102	K069	801-001	DC521	5HK-DI	
C18	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	Note 1
C19	1000			BPD-001	DD-102	K069	801-001	DC521	5HK-DI	Note 2
C20	2, 2			NPO-SI2, 2	TCZ-2R2	TZ05	NPOA-2R2		5TCCB-V22	
C21	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C22	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	

PARTS LIST AND DESCRIPTIONS (Continued)
CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Harman-Kardon PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C23	47			BPD-000047	DD-470	G033	831-470	UC-5447	5GA-Q47	
C24	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C25	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C26	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C27	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C28	.05	200		BPD-05	DF-503	CUB3S5		PT415	2TM-S5	
C29	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C30A	50		†Z24772	†PA-99	†PC-52	†11TM3	†1403-03		†D-3	
B	50									
C31	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C32	22			DI-000022	D6-220	G034	831-220	UC-5422	5GA-Q22	
C33	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C34	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C35	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C36	47			BPD-000047	DD-470	G033	831-470	831-470	5GA-Q47	
C37	47			BPD-000047	DD-470	G033	831-470	831-470	5GA-Q47	
C38	1000			1464-001		1R5D1	811-103	MCB255	MS-21	
C39	470			SI-470	D6-471	TP46	811-471	UC-5347	5GA-T47	
C40	10000			BPD-01	DD-103	K069	811-01	DC511	5HK-SI	
C41	4700			SI-4700	D6-472	TP63	GP2-333-472	UC-5247	5HK-D47	
C42	4700			SI-4700	D6-472	TP63	GP2-333-472	UC-5247	5HK-D47	
C43	270			SI-270	D6-271	TP41	GP2K-271	UC-5227	5GA-T27	
C44	1000			SI-1000	D6-102	TP52	GP2L-102	UC-521	5HK-DI	
C45	1000			SI-1000	D6-102	TP52	GP2L-102	UC-521	5HK-DI	
C46	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C47	.05	200		BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C48	.05	400		BPD-05	DF-503	CUB4S5		PT415	4TM-S5	
C49	330	500		BPD-00033	DD-331	5W5T33	811-331	UC-5333	1FM-T33	Note 3
C50	2000			SI-2000	D6-202	TP56	GP2-333-202	UC-522	5HK-D2	
C51	2000			SI-2000	D6-202	TP56	GP2-333-202	UC-522	5HK-D2	
C52	.02	200		BPD-02	DF-203	CUB2S2	817-02	PT412	2TM-S2	
C53	1000			SI-1000	D6-102	TP52	GP2L-102	UC-521	5HK-DI	
C54	.05	400		BPD-05	DF-503	CUB4S5		PT415	4TM-S5	
C55	.01	200		BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C56	.02	200		BPD-02	DF-203	CUB4S2	817-02	PT412	4TM-S2	
C57	10			N750-SI10	TCN-10	TN01	N750A-100	NT-541	5TCU-Q1	
C58	.25	400		P488N-25		CUB4P25		PT4025	4TM-P25	
C59	.25	400		P488N-25		CUB4P25		PT4025	4TM-P25	
C60	.05	400		BPD-05	DF-503	CUB4S5		PT415	4TM-S5	
C61	.05	400		BPD-05	DF-503	CUB4S5		PT415	4TM-S5	
C62	.1	200		P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C63	10000			BPD-01	DD-103	K082	811-01	DC511	5HK-SI	
C64	.05	600		BPD-05	DF-503	CUB6S5		PT615	6TM-S5	
C65	47			BPD-000047	DD-470	G033	831-470	UC-5447	5GA-Q47	Note 4

Note 1. Some versions may use 1000MMF in this application.
Note 2. Some versions may use 10000MMF in this application.
Note 3. Some versions may use 220MMF in this application.
Note 4. Not used in some versions.
† Items C30A, C30B and R25 are combined in one unit.

DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					ION NOTES
	RESISTANCE	WATTS	Harman-Kardon PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.		
R1A	Switch		RV24721					hel)
B	1Meg *	½						Switch (Rear)
								450K & 700K
R2A	1Meg	½	RV33897	AB-70	A47-1Meg-S	Q13-137		
B	Shaft		Not Req.	AK-4	KSS-3	Not Req.		
R3A	1Meg	½	RV33897	AB-70	A47-1Meg-S	Q13-137		2A.
B	Shaft		Not Req.	AK-4	KSS-3	Not Req.		3A.

RESISTORS

All wattages 1/2 watt, or less, unless otherwis

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Harman-Kardon PART No.	IRC PART No.	
R4	1000Ω			BTS-1000	
R5	68Ω			BTS-68	
R6	10K			BTS-10K	
R7	1000Ω			BTS-1000	
R8	100Ω			BTS-100	
R9	220K			BTS-220K	
R10	560Ω			BTS-560	
R11	2.2Meg			BTS-2.2Meg	
R12	2.2Meg			BTS-2.2Meg	
R13	1000Ω			BTS-1000	
R14	560Ω			BTS-560	
R15	1Meg			BTS-1Meg	
R16	22K			BTS-22K	
R17	2700Ω			BTS-2700	
R18	1000Ω			BTS-1000	
R19	22K			BTS-22K	
R20	47K			BTS-47K	
R21	100K			BTS-100K	
R22	2.2Meg			BTS-2.2Meg	
R23	1000Ω			BTS-1000	Note 1
R24	470K			BTS-470K	
R25	47K		† Z24772	BTS-47K	
R26	47K			BTS-47K	
R27	1000Ω			BTS-1000	
R28	47K			BTS-47K	
R29	27K			BTS-27K	
R30	4700Ω			BTS-4700	
R31	47K			BTS-47K	Note 1
R32	15K			BTS-15K	Note 2
R33	220K			BTS-220K	
R34	100K			BTS-100K	
R35	100K			BTS-100K	
R36	56K			BTS-56K	
R37	1Meg			BTS-1Meg	
R38	47K			BTS-47K	
R39	1000Ω			BTS-1000	
R40	1Meg			BTS-1Meg	
R41	1500Ω			BTS-1500	
R42	68K			BTS-68K	
R43	470K			BTS-470K	
R44	68K			BTS-68K	
R45	33K			BTS-33K	
R46	270K			BTS-270K	
R47	10K			BTS-10K	

ITEM No.	RATIN	ATA	NOTES
	OHMS	RT No.	
R48	330K	-330K	
R49	1Meg	-1Meg	
R50	47K	-47K	
R51	1500Ω	-1500	
R52	6800Ω	-6800	
R53	100K	-100K	
R54	10K	-10K	
R55	22K	-22K	
R56	47K	-47K	
R57	1200Ω	-1200	
R58	22K	-22K	
R59	68K	-68K	
R60	270K	-270K	
R61	100K	-100K	
R62	47K	-47K	
R63	27K	-27K	
R64	100K	-100K	
R65	47K	-47K	
R66	27K	-27K	
R67	12K	-12K	
R68	10K	-10K	
R69	47K	BTS-47K	
R70	470Ω	BTS-470	
R71	22K	BTS-22K	
R72	22K	BTS-22K	
R73	470K	BTS-470K	
R74	470K	BTS-470	
R75	12K	BTB-12K	
R76	47K	BTA-47K	
R77	47K	BTA-47K	
R78	6800	BTB-6800	
R79	560	BTS-560	
R80	1000	BTS-1000	
R81	100K	BTS-100K	
R82	100K	BTS-100K	
R83		BTS-1000	
R8		BTB-120	
R8		BTS-8200	
R86		BTS-100K	
R87		BTA-39	
R88		BTS-220	
R89		BTS-330	
R90		BTS-330	

Note 1. Not used in some ver
Note 2. Some versions use
† Items R25, C30A, C30B are c

TRANSFORMER

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	Harman-Kardon PART No.		Thordarson PART No.	Triad PART No.
T1	117VAC @ 1.3A	730VCT Tap @ 238VCT @ .165A	5VAC @ 3A	6.3VAC @ 5.7A	FT531203			
				SEC. 4				
				24V @ .150A				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	Harman-Kardon PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	4K	16Ω Tap @ 8Ω	FT531204						

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	Harman-Kardon PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	FM Ant. Coil	0Ω						Tapped
L2	RF Choke	3Ω						3.3 Microhenries, IRC Part #CLA
L3	FM RF Coil	0Ω						Tapped
L4	FM Osc. Coil	0Ω						Tapped
L5	Fil. Choke	.8Ω			19-1000		4602	1 Microhenry, IRC Part #CLA
L6	RF Choke	.8Ω			19-1000		4602	1 Microhenry, IRC Part #CLA
L7	AM Loop Stick	.1Ω	.4Ω	GL531182				
L8	AM RF Coil	65Ω	4.5Ω	GT531174				
L9	AM RF Coil	6.7Ω						6.8 Microhenries, IRC Part #CLA
L10	AM Osc. Coil	4.4Ω		GL24601				Tapped @ .4Ω
L11	1st FM IF	.8Ω	.8Ω	GT24606	16-3487	FM-254	1463	
L12	1st AM IF	16Ω	16Ω	GT24610	16-6758	BC-352	12-C1	
L13	2nd FM IF	.8Ω	.8Ω	GT24606	16-3487	FM-254	1463	
L14	2nd AM IF	16Ω	16Ω	GT24610	16-6758	BC-353	12-C2	
L15	3rd FM IF	.8Ω	.8Ω	GT24606	16-3487	FM-254	1463	
L16	Discriminator	.8Ω	1ΩCT	GT481423	17-3494	FM-253	1464	

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA						NOTES
	CURRENT	Harman-Kardon PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.	
M1	.150A	Z371041	1015	A1B	B26D	MIB1E1G	154B	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Harman-Kardon PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	3A 250V			312003. (3AG 3A)	342001	AGC3	HKP

MISCELLANEOUS

ITEM No.	PART NAME	Harman-Kardon PART No.	NOTES
M3	Dial Light		#47
M4	Dial Light		#47
M5	Tuning Cap.	JV531175	6 Gang (AM Sections: 10-555MMF, 10-555MMF, 10-200MMF)
M6	Switch	ER531178	Selector & Record Compensation (Rotary, Wafer Type)
M7	Switch	ES621350	Norm. -Mon. (SPST-Slide Type)
M8	Meter	Z531185	Tuning
	Knob	P24779	Contour Switch
	Knob	P24782	On-Off-Loudness
	Knob	P24780	Control (3 used)
	Knob	P24781	Tuning
	Dial Glass	P531342	
	Dial Pointer	Z24773	

HOFFMAN
MODELS B1061, U, K1061, U, M1061U (Ch. 415, U)

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HOFFMAN MODEL K1061-U

TRADE NAME	Hoffman	MODELS	CHASSIS
		B1061, K1061, M1061	415
		B1061-U, K1061-U, M1061-U	415-U
MANUFACTURER	Hoffman Radio Corp., 6200 S. Avalon Blvd., Los Angeles 3, California		
TYPE SET	Television Receiver		
TUBES	Twenty-five		
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING 2.2 Amp. @ 117 Volts AC	
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

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DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

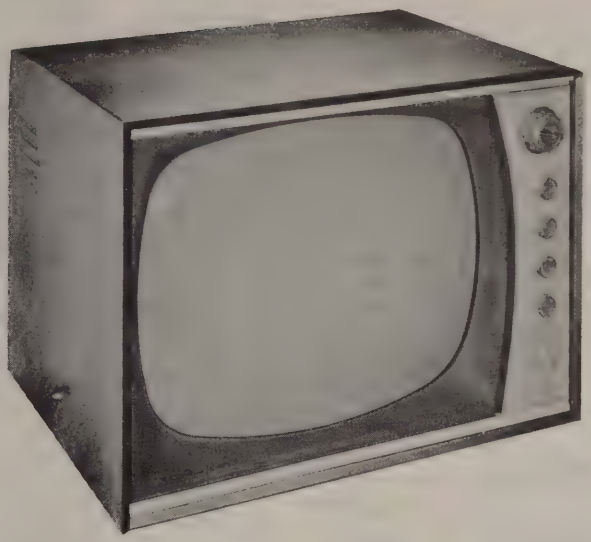
1. Remove 7 push-on type control knobs from front panel of cabinet.

2. Remove 8 metal screws. Remove rear cover.

3. Remove picture tube socket, yoke plug, HV lead and speaker plug.

4. Remove 2 metal chassis bolts and 2 metal screws holding rear chassis brackets. Remove chassis.

5. Remove 2 speaker nuts. Remove speaker.



MODELS	CHASSIS
B1061, K1061, M1061	415
B1061-U, K1061-U, M1061-U ...	415-U

HOFFMAN
MODELS B1061, U, K1061, U, M1061U (Ch. 415, U)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 4 metal screws holding metal molding at top edge of the safety glass. Remove molding and safety glass. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

SPECIAL ADJUSTMENTS

AGC Control Adjustment

The AGC control (R7) is located on rear panel of the chassis. Adjust R7 for MINIMUM snow in the picture.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit is located on the front panel of chassis. Adjust the horizontal hold control until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (A4) located on top

CENTERING

Centering is accomplished mechanically by means of a centering lever on the PM focusing assembly. Adjust the centering lever from side to side, and up and down until the picture is properly centered.

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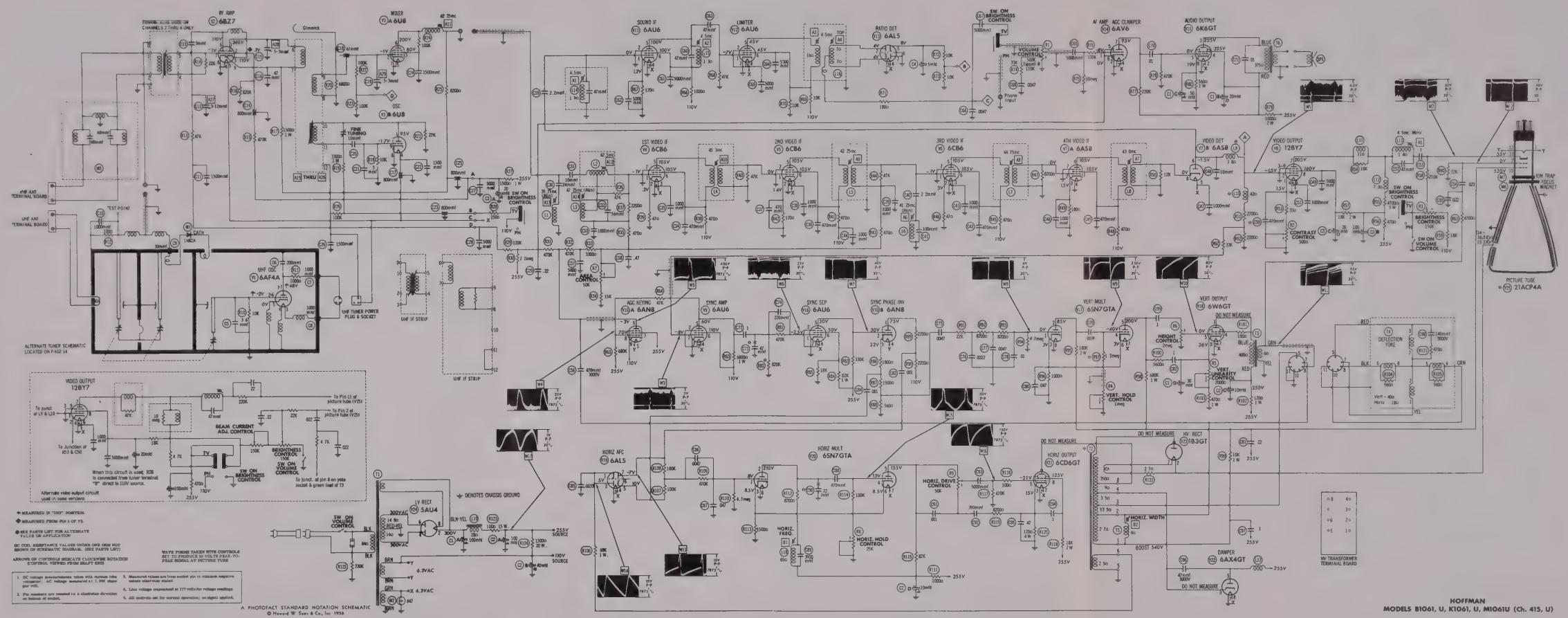
RF AMP V2 6BZ7
MIXER V3A 6U8
OSC V3B 6U8
SOUND IF V11 6AU6
LIMITER V12 6AU6
RATIO DET V13 6AL5
AF AMP. AGC CLAMPER V14 6AV6
AUDIO OUTPUT V15 6K6GT
1ST VIDEO IF V4 6CB6
2ND VIDEO IF V5 6CB6
3RD VIDEO IF V6 6CB6
4TH VIDEO IF V7A 6A58
VIDEO DET V7B 6A58
VIDEO OUTPUT V8 12BY7
UHF OSC V1 6AF4A
AGC KEYING V10A 6AN8
SYNC AMP V9 6AU6
SYNC SEP V16A 6AU6
SYNC PHASE INV V10B 6AN8
VERT MULT V17 6SN7GTA
VERT OUTPUT V18 6W6GT
HORIZ AFC V19A 6AL5
HORIZ MULT V20 6SN7GTA
HORIZ OUTPUT V21 6CD6GT
HV RECT V23 1B3GT
DAMPER V22 6AX4GT
LV RECT V24 5AU4
PICTURE TUBE V25 21ACP4A
VIDEO OUTPUT 12BY7
ALTERNATE TUNER SCHEMATIC LOCATED ON PAGE 14
UHF TUNER POWER PLUG & SOCKET
UHF IF STRIP
BEAM CURRENT ADJ. CONTROL
BRIGHTNESS CONTROL 100K
SW ON BRIGHTNESS CONTROL
SW ON VOLUME CONTROL
VOLUME CONTROL
CONTRAST CONTROL 500Ω
HEIGHT CONTROL 1meg
VERT. HOLD CONTROL 1meg
VERT LINEARITY CONTROL 200K
DEFLECTION YOKE
HORIZ. DRIVE CONTROL 50K
HORIZ. FREQ.
HORIZ. HOLD CONTROL 25K
HORIZ. WIDTH
HV TRANSFORMER TERMINAL BOARD
YOKE TRAP
FOCUS MAGNET
DENOTES CHASSIS GROUND
DO NOT MEASURE
BOOST 540V
110V SOURCE
255V SOURCE
6.3VAC
300VAC
To Pin 11 of picture tube (V25)
To Pin 2 of picture tube (V25)
To junct. of pin 8 on yoke socket & green lead of T3
When this circuit is used, R28 is connected from tuner terminal "B" direct to 110V source.
Alternate video output circuit used in some versions
MEASURED IN "OFF" POSITION.
MEASURED FROM PIN 3 OF V3.
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER OHM NOT SHOWN ON SCHEMATIC DIAGRAM. (SEE PARTS LIST)
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM KNURLED END)
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE
1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured with 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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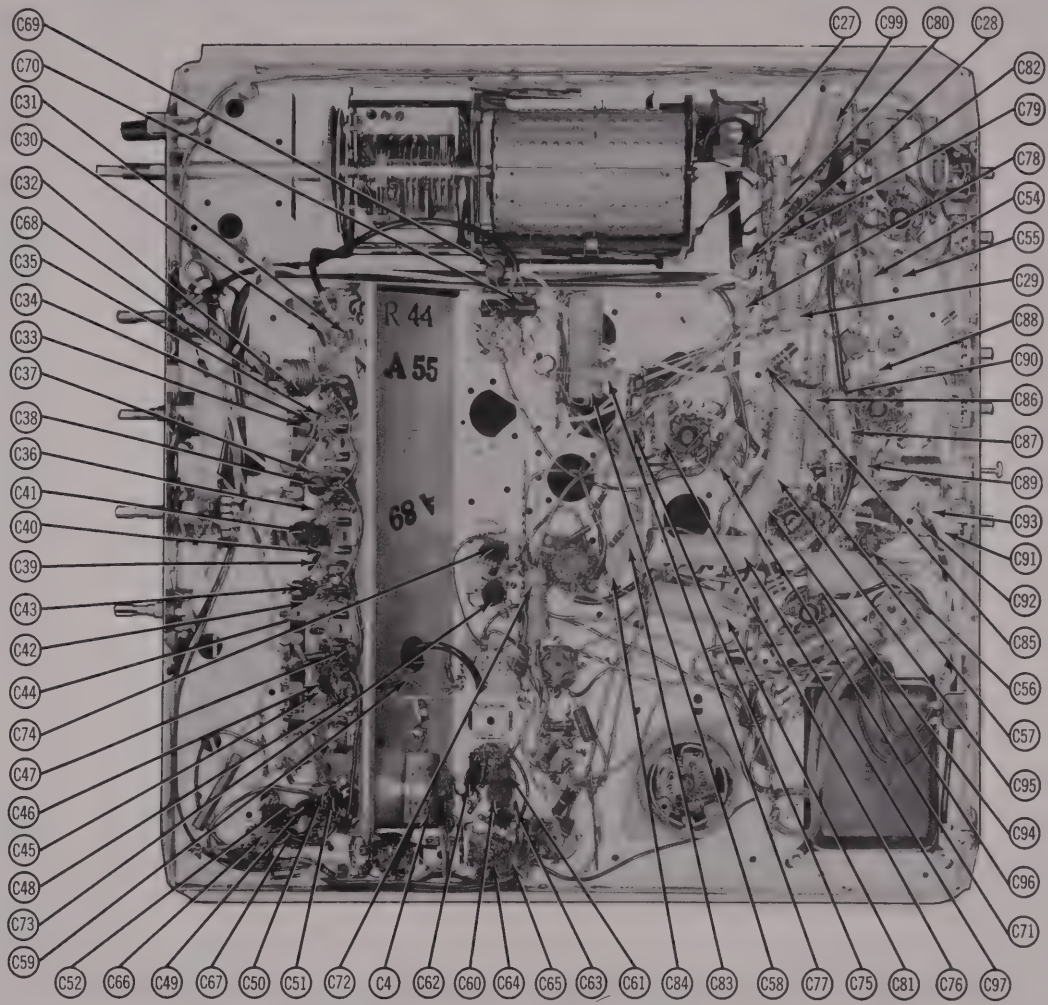
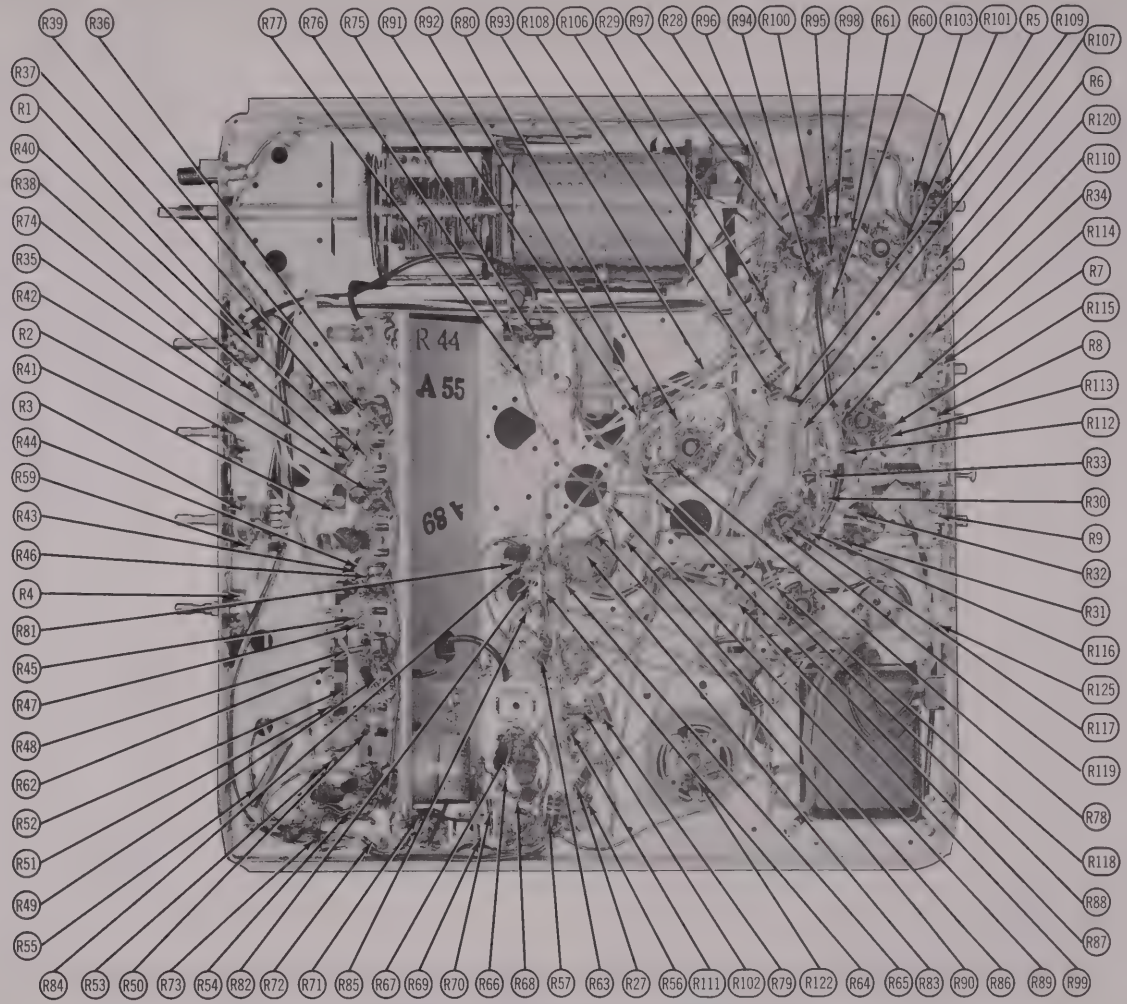
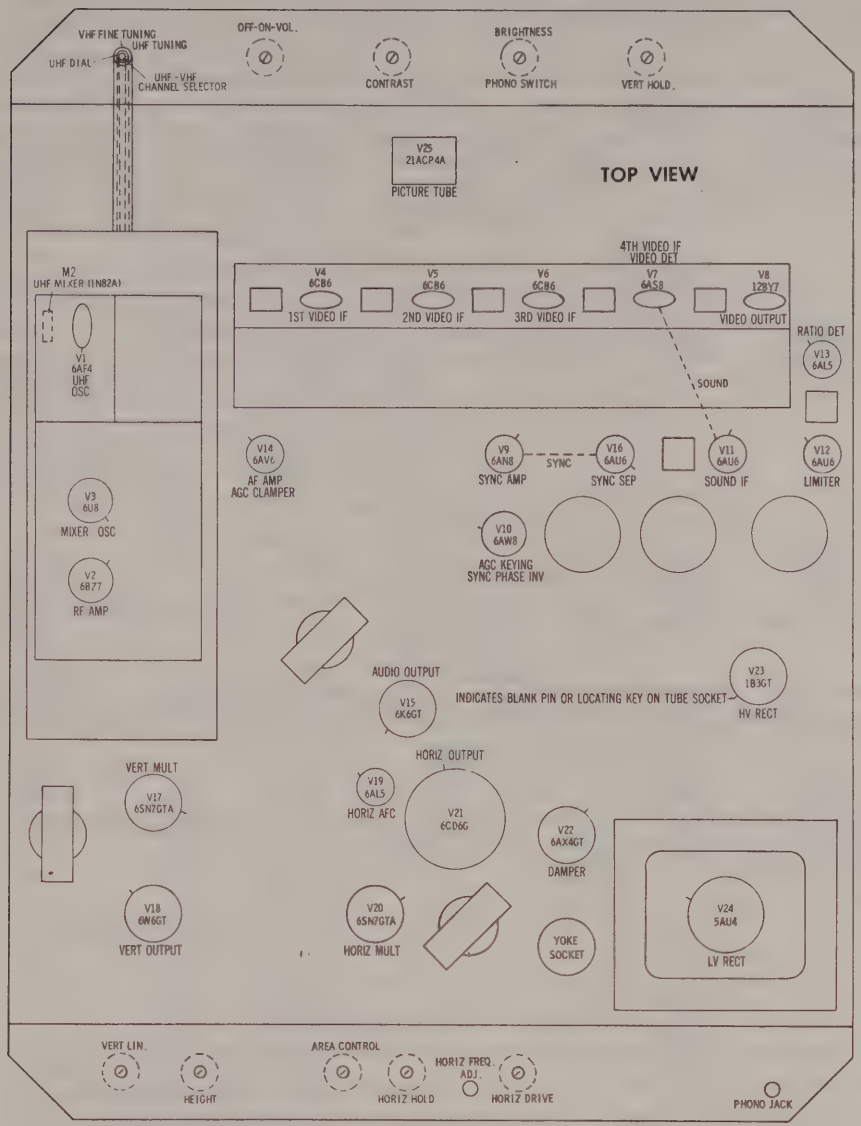


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V24

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V3, V4, V5, V6, V7 (V1 UHF only)
No pic, no sound, has snow - V2, V3, V4
No pic, has sound, has raster - V8, V10, V25
Has pic, no sound - V11, V12, V13, V14, V15
Overloaded picture - V10, V14

SYNC FAILURE
No vert. sync - V10, V17
No horiz. sync - V10, V19, V20
No vert. or horiz. sync - V9, V10, V16

SWEEP FAILURE
No raster, has sound - V20, V21, V22, V23, V25
No vertical deflection - V17, V18
Poor vert. linearity or foldover - V17, V18
Poor horiz. linearity or foldover - V20, V21, V22
Narrow picture - V20, V21, V22, V23, V24
Vert. off freq. - V10, V17
Horiz. off freq. - V10, V19, V20

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Do not remove (V20) to eliminate the high voltage shock hazard.
Switch the tuner between channels so that the detent roller rests on one of the high points of the drum disc. This will disable the local oscillator and reduce the possibility of erroneous indications.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	.005MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Between any two channels.	DC probe to point (B). Common to chassis.	A1, A2, A3	Attenuate signal level to obtain 5 volts on VTVM. Adjust for maximum deflection.
2.	"	"	"	"	DC probe to point (C). Common to chassis.	A4	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.005MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp.)	4.5MC	Any	Vert. amp. thru 10K to point (B). Low side to chassis.	A1, A2, A3	Disconnect stabilizing capacitor (C4). Adjust A1 and A2 for curve of maximum amplitude and symmetry similar to Fig. 1.
2.	"	"	"	"	"	Vert. amp. thru 10K to point (C). Low side to chassis.	A4	Reconnect C4. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 2. SLIGHTLY retouch A3 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

Turn contrast control fully clockwise.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
3.	.005MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	4.5MC (Unmod.)	DC probe to pin 11 (cathode) of picture tube thru detector (Fig. 3). Common to chassis.	A5	Adjust for MINIMUM deflection.

VIDEO IF ALIGNMENT

Turn the contrast control fully counterclockwise. Connect the negative lead of a 3 volt battery to the ungrounded side of C58. Connect the positive lead to chassis.
Attenuate generator as low as possible to obtain readings.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	Direct	High side to an ungrounded tube shield floating over converter tube. Low side to chassis.	41.25MC (Unmod.)	Set between any two channels	DC probe to point (A). Common to chassis.	A6	Adjust for MINIMUM deflection.
5.	"	"	43.0MC	"	"	A7	Adjust for maximum deflection.
6.	"	"	44.75MC	"	"	A8	"
7.	"	"	42.25MC	"	"	A9	"
8.	"	"	45.3MC	"	"	A10	"
9.	"	"	42.5MC	"	"	A11	Adjust for MINIMUM deflection.
10.	"	"	42.5MC	"	"	A12	Adjust for maximum deflection.
11.	"	"	39.75MC	"	"	A13	Adjust for MINIMUM deflection.
12.	"	"	47.25MC	"	"	A14	"
13.	"	"	42.5MC	"	"	A12	Readjust for maximum deflection.
14.	"	"	42.25MC	"	"	A11	Readjust A11 for maximum deflection. Repeat steps 4 thru 14 until no further improvement is noted.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Connect bias as under "Video IF Alignment".

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15.	Direct	High side to an ungrounded tube shield floating over converter tube. Low side to chassis.	43.5MC (10MC Swp.)	39.75MC 41.25MC 42.0MC 45.75MC 47.25MC	Set channel selector between any two channels	Vert. amp. thru 10K to point (A). Low side to chassis.		Check for response curve similar to Fig. 4. Use high scope gain and sweep generator output to view trap markers. If necessary, retouch A7, A9, and A10 for desired response. Bandpass should be approximately 3.75MC. Adjust A10 to place 45.75MC at 50% on response curve. Adjust A9 to place 42.0MC marker. Adjust A7 to eliminate tilt.

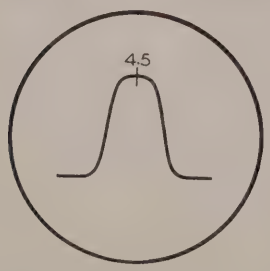


FIG. 1

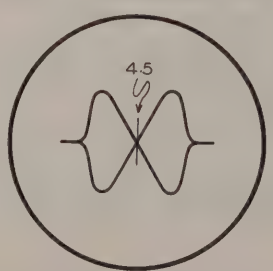


FIG. 2

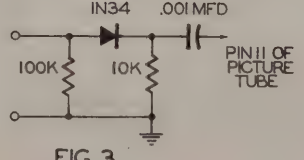


FIG. 3

ALIGNMENT INSTRUCTIONS (cont)

VHF OSCILLATOR ALIGNMENT

The channel oscillator adjustment screws are reached through a hole just to the left of the channel switch shaft. In VHF tuners 9889 the channel oscillator adjustment screws are reached through a hole just the right of the channel switch shaft.
The correct adjustment screw is accessible through this hole as the channel switches turned to each channel.
Connect bias as under "Video IF Alignment.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
16.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp.)	211. 25MC 215. 75MC	13	Vert. amp. thru 10K to point (A). Low side to chassis.	A15	Adjust to place sound marker in trap notch as in Fig. 5. Video marker should be at 50%.
			207MC (10MC Swp.)	205. 25MC 209. 75MC	12		A16	
			201MC (10MC Swp.)	199. 25MC 203. 75MC	11		A17	
			195MC (10MC Swp.)	193. 25MC 197. 75MC	10		A18	
			189MC (10MC Swp.)	187. 25MC 191. 75MC	9		A19	
			183MC (10MC Swp.)	181. 25MC 185. 75MC	8		A20	
			177MC (10MC Swp.)	175. 25MC 179. 75MC	7		A21	
			85MC (10MC Swp.)	83. 25MC 87. 75MC	6		A22	
			79MC (10MC Swp.)	77. 25MC 81. 75MC	5		A23	
			69MC (10MC Swp.)	67. 25MC 71. 75MC	4		A24	
			63MC (10MC Swp.)	61. 25MC 65. 75MC	3		A25	
			57MC (10MC Swp.)	55. 25MC 59. 75MC	2		A26	

VHF RF AND MIXER ALIGNMENT

Leave bias connected as under "Video IF Alignment.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
17.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp.)	205. 25MC 209. 75MC	12	Vert. amp. thru 10K to point (D). Low side to chassis.	A27, A28, A29	Adjust for response curve similar to Fig. 6 with markers above 90%.
18.	"	"	213MC (10MC Swp.)	211. 25MC 215. 75MC	13	"		If markers fall below 70% on any one channel, make compromise adjustment of A27, A28, and A29 with channel switch set to that channel. Check all other channels to see that they have not been seriously affected.
			201MC (10MC Swp.)	199. 25MC 203. 75MC	11			
			195MC (10MC Swp.)	193. 25MC 197. 75MC	10			
			189MC (10MC Swp.)	187. 25MC 191. 75MC	9			
			183MC (10MC Swp.)	181. 25MC 185. 75MC	8			
			177MC (10MC Swp.)	175. 25MC 179. 75MC	7			
			85MC (10MC Swp.)	83. 25MC 87. 75MC	6			
			79MC (10MC Swp.)	77. 25MC 81. 75MC	5			
			69MC (10MC Swp.)	67. 25MC 71. 75MC	4			
			63MC (10MC Swp.)	61. 25MC 65. 75MC	3			
			57MC (10MC Swp.)	55. 25MC 59. 75MC	2			

UHF OSCILLATOR ALIGNMENT FOR UHF-VHF TUNER 9881

In the event the UHF oscillator tube is replaced, it is recommended that several tubes be tried and the one which works best should be used. Alignment of this portion of the tuner should not be required in the field.

UHF RF AND MIXER ALIGNMENT FOR UHF-VHF TUNER 9881

The RF and Mixer portion of these tuners have been properly aligned at the factory and are very stable. Alignment should not be required in the field.

FIG.4

FIG.5

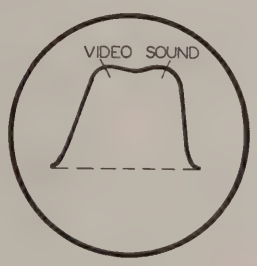
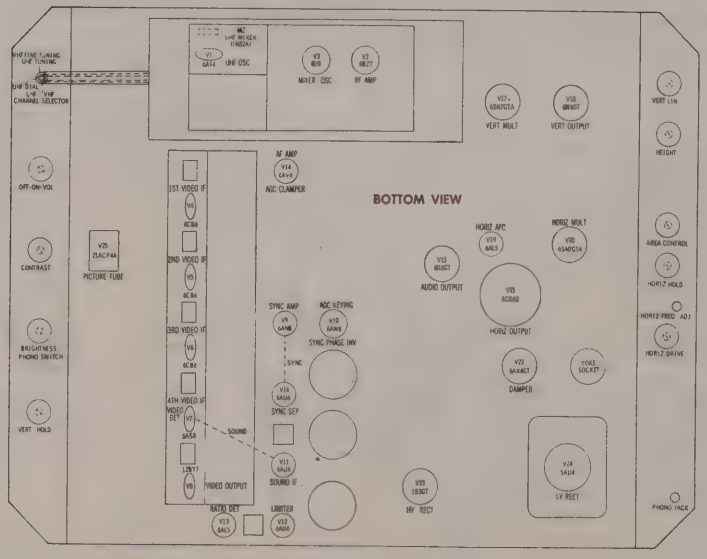


FIG.6

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6AF4A	*†5000Ω	10K	.1Ω	0Ω	0Ω	10K	*†5000Ω		
V2	6BZ7	†3000Ω	300K	INF.	0Ω	.1Ω	INF.	700K	0Ω	†3000Ω
V3	6U8	†5000Ω	200K	†100K	.1Ω	0Ω	†10K	0Ω	0Ω	10K
V4	6CB6	50K	47Ω	.1Ω	0Ω	†2000Ω	†2000Ω	0Ω		
V5	6CB6	.1Ω	120Ω	.1Ω	0Ω	†2000Ω	†2000Ω	0Ω		
V6	6CB6	50K	47Ω	.1Ω	0Ω	†2000Ω	†2000Ω	0Ω		
V7	6AS8	†2000Ω	.1Ω	180Ω	0Ω	.1Ω	5000Ω	0Ω	.1Ω	†2000Ω
V8	12BY7	450Ω	5000Ω	0Ω	0Ω	0Ω	.1Ω	†5300Ω	†18K	0Ω
V9	6AU6	35K	0Ω	0Ω	.1Ω	†8500Ω	†1600Ω	0Ω		
V10	6AN8	†6000Ω	†330K	3.8K	†1.6K	1600Ω	400K	†130Ω	†50K	†1600Ω
V11	6AU6	1.9Ω	0Ω	0Ω	.1Ω	†2500Ω	†2500Ω	120Ω		
V12	6AU6	47K	0Ω	0Ω	.1Ω	†10K	†10K	0Ω		
V13	6AL5	INF.	INF.	0Ω	.1Ω	20K	0Ω	0Ω		
V14	6AV6	10Meg	0Ω	0Ω	.1Ω	650K	650K	†220K		
V15	6K6GT	TP	.1Ω	†1300Ω	†1100Ω	470K	NC	0Ω	560Ω	
V16	6AU6	1.2Meg	0Ω	0Ω	.1Ω	†330K	†22K	0Ω		
V17	6SN7GTA	4.7Meg	▲190K	1K	1.5Meg	▲700K	1000Ω	.1Ω	0Ω	
V18	6W6GT	TP	0Ω	†700Ω	†800Ω	1.2Meg	NC	.1Ω	1K	
V19	6AL5	68K	68K	0Ω	.1Ω	5Meg	NC	5Meg		
V20	6SN7GTA	4.7Meg	†9500Ω	1500Ω	100K	†85K	1.5K	.1Ω	0Ω	
V21	6CD6GT	NC	.1Ω	120Ω	TP	470K	TP	0Ω	†18K	TOP CAP ▲9Ω
V22	6AX4GT	TP	NC	INF.	NC	†130Ω	NC	0Ω	.1Ω	
V23	1B3GT		PINS	1-8	HAVE	INF.	RESISTANCE			TOP CAP ▲360Ω
V24	5AU4	INF.	10K	INF.	16Ω	INF.	15Ω	INF.	10K	
V25	21ACP4A	†1600Ω	22K	PIN 10 ▲10K	PIN 11 †400K	PIN 12 †1600Ω				

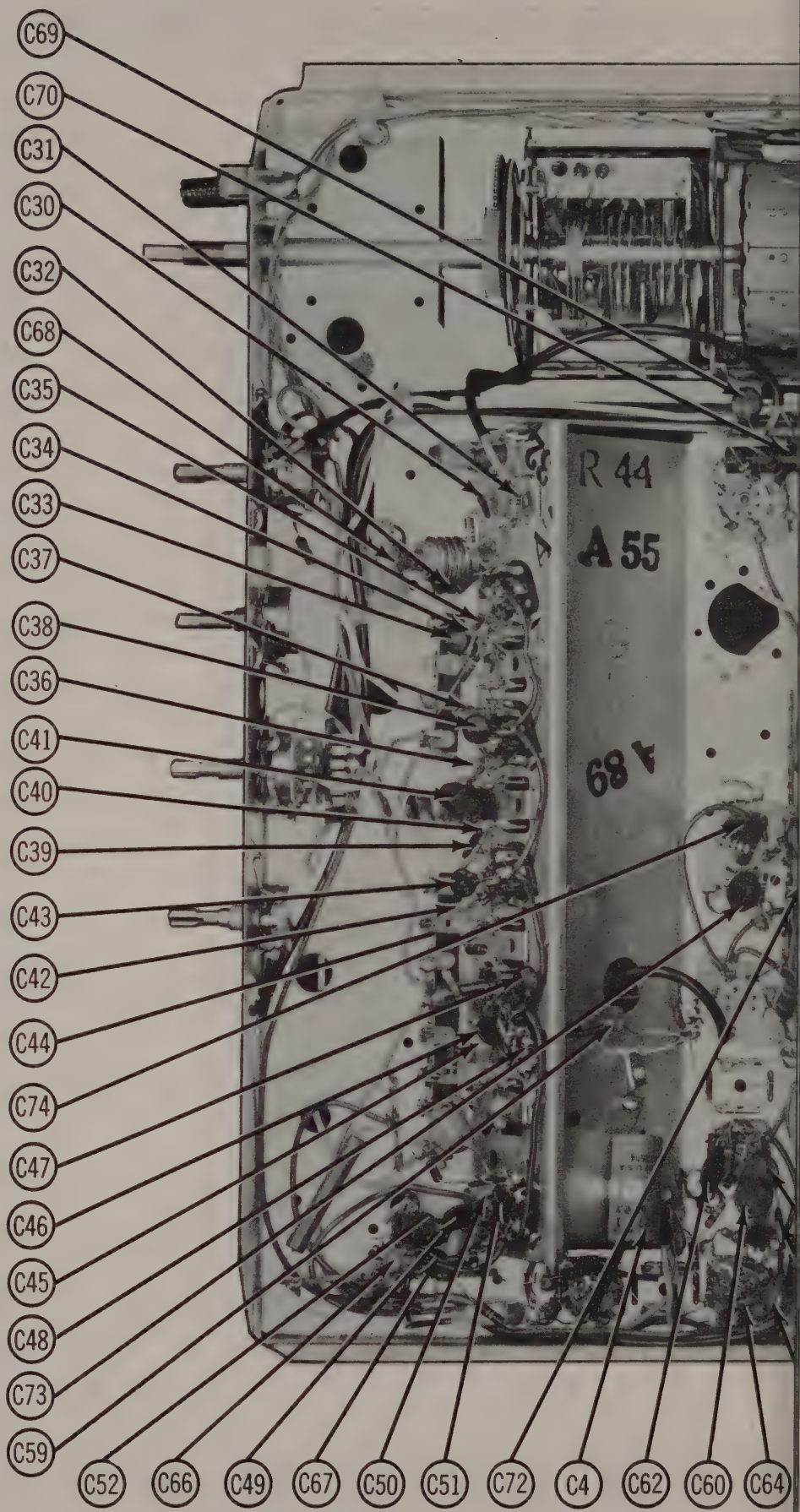
* MEASURED IN "UHF" POSITION.
† MEASURED FROM PIN 2 OF V24.
▲ MEASURED FROM PIN 3 OF V22.
TP TIE POINT.
NC NO CONNECTION.



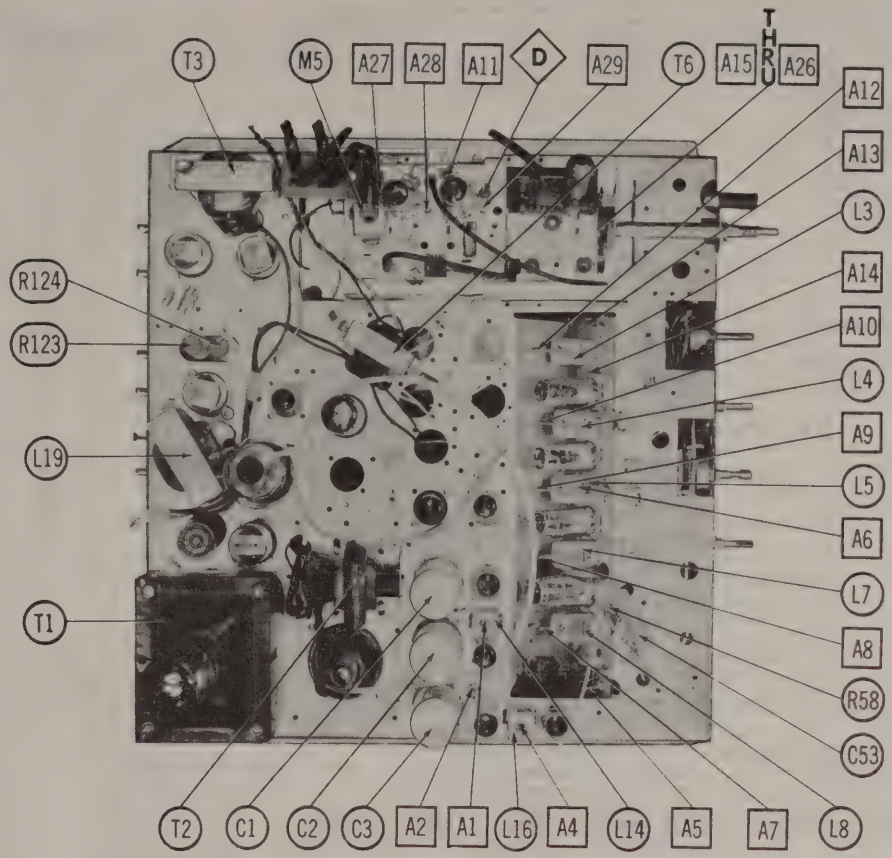
TUBE PLACEMENT CHART

DENVER, COLORADO

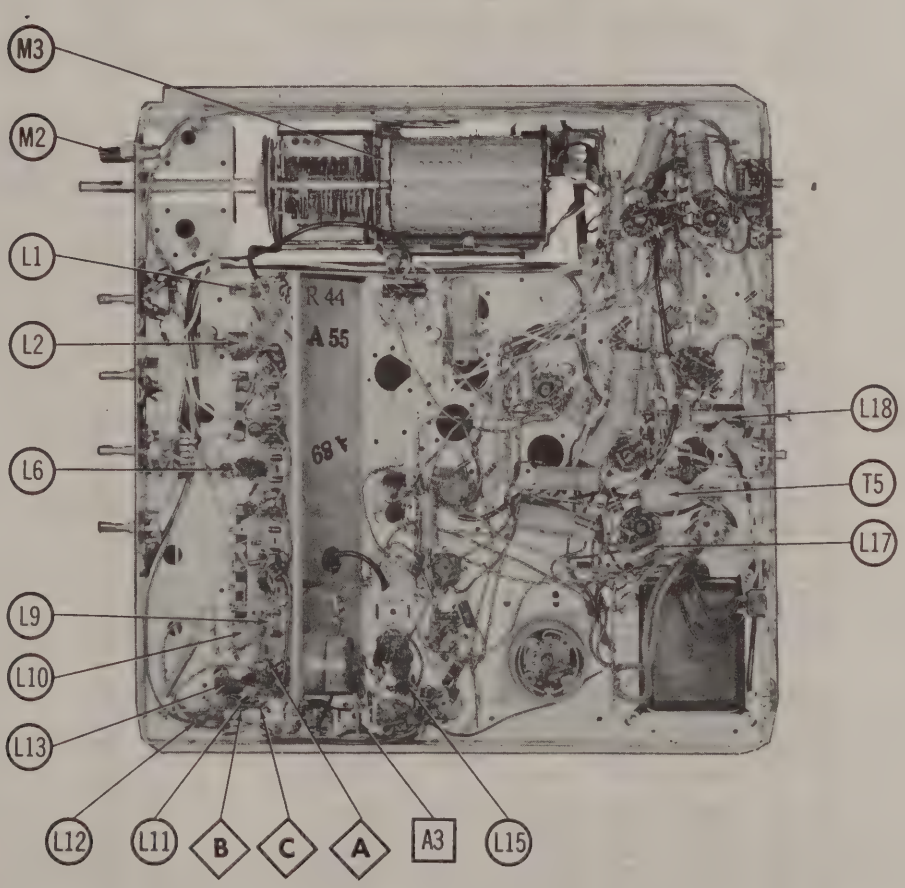
SISTOR IDENTIFICATION



CHASSIS BOTTOM VIEW-C



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

PARTS LIST AND D

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	UHF Oscillator	6AF4A	
V2	RF Amplifier	6BZ7	
V3	Mixer-Oscillator	6U8	
V4	1st. Video IF Amplifier	6CB6	
V5	2nd. Video IF Amplifier	6CB6	
V6	3rd. Video IF Amplifier	6CB6	
V7	4th. Video IF Amplifier-Video Detector	6AS8	
V8	Video Output	12BY7	
V9	Sync Amplifier	6AU6	
V10	AGC Keying - Sync Phase Inverter	6AN8	
V11	Sound IF Amplifier	6AU6	

ITEM No.	USE	TYPE	NOTES
V12	Limiter	6AU6	
V13	Ratio Detector	6AL5	
V14	AF Amplifier-AGC Clamper	6AV6	
V15	Audio Output	6K6GT	
V16	Sync Separator	6AU6	
V17	Vert. Mult.	6SN7GTA	
V18	Vert. Output	6W6GT	
V19	Horiz. AFC	6AL5	
V20	Horiz. Mult.	6SN7GTA	
V21	Horiz. Output	6CD6GT	
V22	Damper	6AX4GT	
V23	HV Rectifier	1B3GT	
V24	LV Rectifier	5AU4	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	HOFFMAN PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V25	21ACP4A/ 21AMP4A ①	21AMP4A ① 21AMP4	21ACP4A/ 21AMP4A ① 21ACP4/21AMP4	21ACP4A ② 21AMP4A ② 21ACP4 21AMP4	① Aluminized ② Silver screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	HOFFMAN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲100	350	4241A	AFH4-56-75		FP420.26	TMQ-138	Q-221.5	TVL-4634
B	■20	350							
C	▲50	50							
D	30	50							
C2A	▲100	350	4231A	AFH4-92-75		FP389.1 TC78		Q-012 MTD-4510	R2240 *
B	■40	350							
C	10	350							
D	▲10	350							
C3A	▲20	350	4238A	AFH3-155-60		FP398.1 TC68	TMQ-8 TD-20-350	T-110 FM-4520	R2239 *
B	▲100	350							
C	■20	350							
C4	5	50	4277-1	SRE50V5	BR550	TC30	TD-5-50	MMT-0505	TVA-1303

* Non-catalog items.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	3.6									
C6	200									
C7	1000									
C8	1000									
C9	30									
C10	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C11	1500			BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15	
C12	3-12									
C13	3			NP0-DI3	TCZ-3R3	Z007	NP0A-030	ZT-553	5TCCB-V33	
C14	800									
C15	.5-3				829-3		3115-01-0R5	CT565A		
C16	47									
C17	800									
C18	47				MFT-50					
C19	.5-3				829-3		3115-01-0R5	CT565A		
C20	10			N750-DI10	TCN-10	N018	N750K-100	NT-541	5TCU-Q1	
C21	5									
C22	1500			BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15	
C23	800									
C24	1500			BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15	
C25	800									
C26	1500			BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15	
C27	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C28	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C29	.22	200		P288N-22		CUB2P22		PT4022	2TM-P22	
C30	24				TCZ-24	Z025	NP0L-240			
C31	10			NP0-SI10	TCZ-10	TZ09	NP0A-100	ZT-541	5TCC-Q1	
C32	56			NP0-DI56	TCZ-56	Z036	NP0-337-560			
C33	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C34	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C35	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C36	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C37	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C38	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C39	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C40	2.2			NP0-SI2.2	TCZ-2R2	Z006	NP0A-2R2		5TCCB-V22	
C41	100			NP0-DI100	TCZ-100	TZ30	NP0-337-101	ZT-531	5TCC-T1	
C42	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C43	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C44	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C45	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C46	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C47	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C48	10			NP0-SI10	TCZ-10	TZ09	NP0A-100	ZT-541	5TCC-Q1	
C49	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C50	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	Note 1
C51	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C52	47									
C53	.1	400		P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C54	.022	600		BPD-02	DF-203	CUB6S22	817-02	PT6122	6TM-S22	
C55	.022	600		BPD-02	DF-203	CUB6S22	817-02	PT6122	6TM-S22	
C56	470	3000		HVD-30-470	DD30-471	V3T47	3KV-470	DC30347	30GA-T5	
C57	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C58	.47	200		P288N-47		CUB2P47		PT4047	2TM-P47	
C59	2.2			NP0-SI2.2	TCZ-2R2	TZ05	NP0A-2R2		5TCCB-V22	
C60	47									
C61	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C62	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C63	47			BPD-000047	DD-470	G033	831-470	UC-5447	5GA-Q47	
C64	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C65	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C66	.0047	400		BPD-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C67	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C68	.0047	400		BPD-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C69	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	

CAPACITORS

ITEM No.	RATING		HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORN DUBIL PART
	CAP.	VOLT				
C70	.01	600		BPD-01	D6-103	CUB6
C71	.01	600		BPD-01	D6-103	CUB6
C72	.1	200		P288N-1	DF-104	CUB2
C73	47			BPD-000047	DD-470	G033
C74	220			DI-00022	DD-221	G051
C75	.0047	400		BPD-0047	D6-472	CUB6
C76	.0022	200		BPD-0022	D6-222	CUB6
C77	.0047	200		BPD-0047	D6-472	CUB6
C78	.01	200		BPD-01	D6-103	CUB4
C79	.0039	400		1464-0039		1R5D
C80	.0047	200		BPD-05	DF-503	CUB2
C81	.22	600		P688N-22		CUB6
C82	.1	600		P688N-1	DF-104	CUB6
C83	.001	400		1464-001		1R5D
C84	.001	400		1464-001		1R5D
C85	.0033	400		BPD-0033	D6-332	CUB6
C86	.0047	600		BPD-0047	D6-472	CUB2
C87	.047	200		BPD-05	DF-503	5R5T
C88	470	500		1464-00047	D6-471	5R5T
C89	3900	500		1464-0039		1R5D
C90	22			NP0-SI22	TCZ-22	Z024
C91	.001	400		BPD-001	D6-102	CUB6
C92	390	500			D6-391	5R5T
C93	5000			BPD-005	DD-502	K080
C94	.1	600		P688N-1	DF-104	CUB6
C95	.47	200		P288N-47		CUB2
C96	47	3000		HVD-30-47	DD30-470	Z033
C97	.1	600		P688N-1	DF-104	CUB6
C98	140	3000				
C99	.1	600		P688N-1	DF-104	CUB6

Note 1. Some versions may use 220MMF unit in this application.
Note 2. Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			PA
	RESISTANCE	WATTS	HOFFMAN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	
R1A	500KΩ	½	H4836A	ABT-66	A47F3-500K	Q13-
B	Shaft		Not Req.	AK-4	KSS-3	Not
C	Switch		Not Req.	KB-2	SWE-20	76-2
R2A	500Ω	½	H4878A	AB-4	A47-500-S	Q11-
B	Shaft		Not Req.	AK-4	KSS-3	Not
R3	150KΩ	½	H4841A			
R4A	1Meg	½	H4877A	AB-69	A47-1Meg-S	Q11-
B	Shaft		Not Req.	AK-4	KSS-3	Not
R5A	2000Ω	½	H4827A	VK-131	A43-2000	WPS
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not
R6A	2Meg	½	H4965	BX-75	A47-2Meg-S	Q11-
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not
R7A	50KΩ	½	H4964	BX-31	A47-50K-S	Q11-
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not
R8A	25KΩ	½	H4845A	AB-26	A47-25K-S	Q11-
B	Shaft		Not Req.	AK-1	FKS-1/4	Not
R9A	50KΩ	½	H4964	BX-31	A47-50K-S	Q11-
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not

RESISTORS

All wattages 1/2 watt, or less, unless

ITEM No.	RATING		REPLACEMENT DATA		NOTES	ITE N
	OHMS	WATT	HOFFMAN PART No.	IRC PART No.		
R10	10K					R5
R11	1000Ω			BTS-1000		R5
R12	100Ω					R6
R13	47K			BTS-47K		R6
R14	22K			BTS-22K		R6
R15	470K			BTS-470K		R6
R16	820K			BTS-820K		R6
R17	1500Ω	1		BTA-1500		R6
R18	10K					R6
R19	3300Ω	1		BTA-3300		R6
R20	6800Ω					R6
R21	27K					R6
R22	100K			BTS-100K		R7
R23	100K			BTS-100K		R7
R24	100K			BTS-100K		R7
R25	8200Ω			BTS-8200		R7
R26	100K			BTS-100K		R7
R27	1500Ω	1		BTA-1500		R7
R28	150Ω			BTS-150		R7
R29	120K			BTS-120K		R7
R30	2.2Meg 5%			BTS-2.2Meg 5%		R7
R31	470K			BTS-470K		R8
R32	470K			BTS-470K		R8
R33	3300Ω			BTS-3300		R8
R34	15K			BTS-15K		R8
R35	470Ω			BTS-470		R8
R36	47K					R8
R37	2200Ω			BTS-2200		R8
R38	470Ω			BTS-470		R8
R39	47Ω			BTS-47		R8
R40	47K					R8
R41	470Ω			BTS-470		R9
R42	120Ω			BTS-120		R9
R43	470Ω			BTS-470		R9
R44	47K			BTS-47K		R9
R45	470Ω			BTS-470		R9
R46	47Ω			BTS-47		R9
R47	8200Ω					R9
R48	470Ω			BTS-470		R9
R49	180Ω			BTS-180		R9
R50	12K			BTS-12K		R9
R51	2700Ω			BTS-2700		R10
R52	2200Ω			BTS-2200		R10
R53	33Ω			BTS-33		R10
R54	10K			BTS-10K		R10
R55	4700Ω	5	44611			R10
R56	470Ω			BTS-470		R10
R57	18K	2		BTB-18K		R10

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	UHF Oscillator	6AF4A	
V2	RF Amplifier	6BZ7	
V3	Mixer-Oscillator	6U8	
V4	1st. Video IF Amplifier	6CB6	
V5	2nd. Video IF Amplifier	6CB6	
V6	3rd. Video IF Amplifier	6CB6	
V7	4th. Video IF Amplifier- Video Detector	6AS8	
V8	Video Output	12BY7	
V9	Sync Amplifier	6AU8	
V10	AGC Keying - Sync Phase Inverter	6AN8	
V11	Sound IF Amplifier	6AU8	
V12	Limiter	6AU6	
V13	Ratio Detector	6AL5	
V14	AF Amplifier-AGC Clamper	6AV6	
V15	Audio Output	6K6GT	
V16	Sync Separator	6AU6	
V17	Vert. Mult.	6SN7GTA	
V18	Vert. Output	6W6GT	
V19	Horiz. AFC	6AL5	
V20	Horiz. Mult.	6SN7GTA	
V21	Horiz. Output	6CD6GT	
V22	Damper	6AX4GT	
V23	HV Rectifier	1B3GT	
V24	LV Rectifier	5AU4	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	HOFFMAN PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V25	21ACP4A/ 21AMP4A ①	21AMP4A ① 21AMP4A ②	21ACP4A ② 21ACP4 21AMP4	21ACP4A ② ① Aluminized 21AMP4A ② ② Silver screen "85"	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLT.	REPLACEMENT DATA HOFFMAN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.	NOTES
C1A	▲100	350	4341A	AFH-58-75		FP430-38	TMQ-138	Q-321.5	TVL-4634	
B	▲80	350								
C	▲50	50								
D	30	50								
C1A	▲100	350	4331A	AFH-82-75		FP389.1 TC78		Q-013 MTD-4510	R2340 *	
B	▲40	350								
E	10	350								
D	▲10	350								
C2A	▲20	350	4338A	AFH3-155-60		FP396.1 TC66	TMQ-8 TD-30-350	T-U10 FM-4530	R2339 *	
B	▲100	350								
A	▲20	350								
C4	5	50	4277-1	SRE50V5	BR550	TC30	TD-5-50	MMT-0505	TVA-1303	

* Non-catalog items.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C3	3.8									
C6	300									
C7	1000									
C8	1000									
C9	30									
C10	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C11	1500			BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15	
C12	3-12									
C13	3			NPO-D3	TCZ-3R3	Z007	NPOA-030	ZT-553	5TCCB-V33	
C14	800									
C15	.5-3				829-3		3115-01-025	CT565A		
C16	47									
C17	800									
C18	47			MPT-50						
C19	.5-3			829-3			3115-01-025	CT565A		
C20	10			N750-D10	TCN-10	N018	N750K-100	NT-541	5TCU-Q1	
C21	5									
C22	1500			BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15	
C23	800									
C24	1500			BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15	
C25	900									
C26	1500			BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15	
C27	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C28	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C29	.22	200		P288N-22			CW132P22		5TW-P22	
C30	24				TCZ-24	Z025	NP0L-240			
C31	10			NPO-ED10	TCZ-10	TZ09	NPOA-100	ZT-541	5TCC-Q1	
C32	56			NPO-D056	TCZ-56	Z036	NPO-337-560			
C33	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C34	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C35	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C36	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C37	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C38	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C39	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C40	3.2			NPO-ST3.2	TCZ-3R2	Z006	NPOA-2R2	ZT-531	5TCCB-V22	
C41	100			NPO-ED100	TCZ-100	TZ30	NPOA-101	ZT-541	5TCC-T1	
C42	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C43	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C44	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C45	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C46	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C47	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C48	10			NPO-ED10	TCZ-10	TZ09	NPOA-100	ZT-541	5TCC-Q1	
C49	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C50	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	Note 1
C51	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C52	47									
C53	.1	400		P468N-1	DF-104	CUB4P1		PT401	4TM-P1	
C54	.022	600		BPD-02	DF-203	CUB8S2	817-02	PT623	8TM-S22	
C55	.022	600		BPD-02	DF-203	CUB8S2	817-02	PT6123	8TM-S22	
C56	470	3000		HVD-30-470	DD30-471	V37Y7	3KV-470	DC30347	30GA-T5	
C57	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C58	.47	300		P288N-47		CUB2P47		PT4047	2TM-P47	
C59	3.2			NPO-ST3.2	TCZ-3R2	TZ05	NPOA-3R2		5TCCB-V22	
C60	47									
C61	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C62	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C63	47			BPD-000047	DD-470	G033	831-470	UC-5447	5GA-Q47	
C64	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C65	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C66	.0047	400		BPD-0047	DD-472	CUB4D47	GP3-333-472	PT6247	6TM-D47	
C67	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C68	.0047	400		BPD-0047	DD-472	CUB6D47	GP3-333-472	PT6247	6TM-D47	
C69	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No.	RATING CAP	VOLT	REPLACEMENT DATA HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C70	.01	600		BPD-01	DE-103	CUB6S1	GP3-333-103	PT611	6TM-S1	
C71	.01	600		BPD-01	DE-103	CUB6S1	GP3-333-103	PT611	6TM-S1	
C72	.1	200		P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C73	47			BPD-000047	DD-470	G033	831-470	UC-5447	5GA-Q47	Note 2
C74	220			DD-00023	DD-221	G061	831-221	UC-5322	5GA-T22	
C75	.0047	400		BPD-0047	DE-472	CUB6D47	GP3-333-472	PT6247	6TM-D47	
C76	.0022	200		BPD-0022	DE-222	CUB6D22	GP3-333-222	PT6222	6TM-D22	
C77	.0047	200		BPD-0047	DE-472	CUB6D47	GP3-333-472	PT6247	6TM-D47	
C78	.01	200		BPD-01	DE-103	CUB6S1	GP3-333-103	PT611	6TM-S1	
C79	.0039	400		1464-0039		IRS3D39		MCB463	MS-339	
C80	.0047	300		BPD-05	DF-503	CUB5S47		PT6147	5TM-S47	
C81	.22	600		P468N-22		CUB4P22		PT6322	4TM-P22	
C82	.1	600		P688N-1	DF-104	CUB6P1		PT601	6TM-P1	
C83	.001	400		1464-001		IRS3D1	811-102	MCB255	MS-21	
C84	.001	400		1464-001		IRS3D1	811-102	MCB255	MS-21	
C85	.0033	400		BPD-0033	DE-332	CUB6D33	GP3-333-332	PT6233	6TM-D33	
C86	.0047	400		BPD-0047	DE-472	CUB6D47	GP3-333-472	PT6247	6TM-D47	
C87	047	200		BPD-05	DF-503	SRS7T47		PT4147	3TM-S47	
C88	470	500		1464-00047	DE-471	SRS7T47	811-471		3MS-347	
C89	390	500		1464-0039		IRS3D39		MCB463	MS-239	
C90	22			NPO-S122	TCZ-22	Z024	NP0K-220			Note 2
C91	.001	400		BPD-001	DE-102	CUB6D1	GP2L-102	PT621	6TM-D1	
C92	390	500			DE-391	SRS7S9	811-391		MS-339	
C93	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C94	.1	500		P688N-1	DF-104	CUB2P1		PT601	6TM-P1	
C95	.47	200		P288N-47		CUB2P47		PT4047	2TM-P47	
C96	47	3000		HVD-30-47	DD30-470	Z033	3KV-470	DC30447	30GA-Q47	
C97	.1	600		P688N-1	DF-104	CUB6P1		PT601	6TM-P1	
C98	140	3000								
C99	.1	500		P688N-1	DF-104	CUB6P1		PT601	6TM-P1	

Note 1. Some versions may use 220MMF unit in this application.
Note 2. Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA HOFFMAN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	H4834A	A4T2-500K	Q13-153X	UT-437		Volume tapped at 110KΩ
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R1A.
C	Switch		Not Req.	SW2-20	76-3	UB-27		Attach to R1A.
R2A	500Ω	½	H4878A	AB-4	A4T-500-S	U3		Contrast
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R3A.
R3	150KΩ	½	H4841A					Brightness & Phono Switch
R4A	1Meg	½	H4877A	AB-69	A4T-1Meg-S	Q11-137	U54	Vert. Hold
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R4A.
R5A	2000Ω	½	H4827A	YK-181	A4S-2000	WEB2000	R2500L	Vert. Linearity Wire-Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R5A.
R6A	2Meg	½	H4865	BX-75	A4T-2Meg-S	Q11-139	TA36L	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R6A.
R7A	50KΩ	½	H4964	BX-31	A4T-50K-S	Q11-133	TA54L	Area
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R7A.
R8A	250KΩ	½	H4816A	AB-38	A4T-250K-S	Q11-150	TA253L	Horiz. Hold
B	Shaft		Not Req.	AK-1	FKS-1/4	Not Req.	Not Req.	Attach to R8A.
R9A	50KΩ	½	H4964	BX-31	A4T-50K-S	Q11-133	TA54L	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R9A.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA HOFFMAN PART No.	IRC PART No.	NOTES
R10	10K				
R11	1000Ω			BTS-1000	
R12	100Ω				
R13	47K			BTS-47K	
R14	22K			BTS-22K	
R15	470K			BTS-470K	
R16	820K			BTS-820K	
R17	1500Ω	1		BTA-1500	
R18	10K				
R19	3300Ω	1		BTA-3300	
R20	5800Ω				
R21	27K				
R22	100K			BTS-100K	
R23	100K			BTS-100K	
R24	100K			BTS-100K	
R25	8200Ω			BTS-8200	
R26	100K			BTS-100K	
R27	1500Ω	1		BTA-1500	
R28	150Ω			BTS-150	
R29	120K			BTS-120K	
R30	2.2Meg ±%			BTS-2.2Meg	
R31	470K			BTS-470K	
R32	470K			BTS-470K	
R33	3300Ω			BTS-3300	
R34	15K			BTS-15K	
R35	470Ω			BTS-470	
R36	47K				
R37	2200Ω			BTS-2200	
R38	470Ω			BTS-470	
R39	47Ω			BTS-47	
R40	47K				
R41	470Ω			BTS-470	
R42	120Ω			BTS-120	
R43	470Ω			BTS-470	
R44	47K			BTS-47K	
R45	470Ω			BTS-470	
R46	47Ω			BTS-47	
R47	2200Ω				
R48	470Ω			BTS-470	
R49	180Ω			BTS-180	
R50	12K			BTS-12K	
R51	2700Ω			BTS-2700	
R52	2200Ω			BTS-2200	
R53	23Ω			BTS-23	
R54	10K			BTS-10K	
R55	4700Ω	5	44611		
R56	470Ω			BTS-470	
R57	18K	2		BTS-18K	

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA HOFFMAN PART No.	IRC PART No.	NOTES
R58	270K			BTS-270K	
R59	18K			BTS-18K	
R60	22K			BTS-22K	
R61	4700Ω			BTS-4700	
R62	33K			BTS-33K	
R63	6800Ω	1		BTA-6800	
R64	47K			BTS-47K	
R65	680K ±%			BTS-680K ±%	
R66	1000Ω			BTS-1000	
R67	1200Ω			BTS-120	
R68	47K			BTS-47K	
R69	10K			BTS-10K	
R70	10K			BTS-10K	
R71	180Ω			BTS-180	
R72	100K			BTS-100K	
R73	10K			BTS-10K	
R74	33K			BTS-33K	
R75	10 MMeg			BTS-10M	
R76	100K			BTS-100K	
R77	220K			BTS-220K	
R78	470K			BTS-470K	
R79	1000Ω	2		BTS-1000	
R80	560Ω	1		BTA-560	
R81	470K			BTS-470K	
R82	330K			BTS-330K	Note 1
R83	330K			BTS-330K	
R84	82K	1		BTA-82K	
R85	18K			BTS-18K	
R86	1800Ω			BTS-1800	
R87	1500Ω ±%			BTS-1500 ±%	
R88	560Ω			BTS-560	
R89	2200Ω			BTS-2200	
R90	2200Ω ±%			BTS-2200 ±%	
R91	22K			BTS-22K	
R92	8200Ω			BTS-8200	
R93	8200Ω			BTS-8200	
R94	4.7Meg			BTS-4.7Meg	
R95	180K	2		BTS-180K	
R96	1000Ω			BTS-1000	
R97	1.2Meg			BTS-1.2Meg	Note 2
R98	680K	1		BTA-680K	
R99	10K	1		BTA-10K	
R100	5600			BTS-5600	
R101	100			BTS-100	
R102	120Ω	1		BTA-120	
R103	470Ω	1		BTA-470	
R104	560Ω				
R105	560Ω				
R106	68K	1			

RESISTORS (cont)

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA HOFFMAN PART No.	IRC PART No.	NOTES
R107	470K				
R108	18K				
R109	8200Ω			BTS-8200	
R110	330Ω	4	4718A		
R111	1000Ω			BTS-1000	
R112	820Ω		4723	BWI-2.7	
R113	1500Ω ±%	15	4730A	2D-100	
R114	150Ω	20	4722A	2D-150	
R115	330K			BTS-330K	
R116	100Ω				

Note 1. Some versions use a 470K ½W resistor in this application.
Note 2. Some versions use a 1Meg ½W resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA HOFFMAN PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC	600VCT	5V	6.3A	HS070					
	② 2.2A	@ 320A	@ 3A	@ 11.4A						
	SEC. 4									
	6.3V									
	@ 1.02A									

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	HOFFMAN PART No.	Halldorson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Horiz. Output Trans.	6154A-3 6154A ①							
T3	Vert. Output Trans.	2190A	21900 ②	A-8223		V307	A-8143 ③	28572	A-108X
T4A	Yoke (90°) Horiz. (12MH)	6154A	DF808 ③ ④ ⑤	MDF-91 ③	23TD1 ③ ⑤ ⑥	A-8143 ③ ④ ⑤	V90F13/47 ③ ④ ⑤	DY-12A ③ ④ ⑤	Y-14 ③ ④ ⑤	Y-40-1 ③ ④ ⑤
B	Vert. (90MH)	6154A	DF808 ③ ④ ⑤	MDF-91 ③	23TD1 ③ ⑤ ⑥	A-8143 ③ ④ ⑤	V90F13/47 ③ ④ ⑤	DY-12A ③ ④ ⑤	Y-14 ③ ④ ⑤	Y-40-1 ③ ④ ⑤
T5	Width Coil (2.7-17MH)	5464	RF800 ③	MWC-11	21GR1	30LR16	WC-5 ③	WC-16 ③	WC-13 ③	

① Alternate Hoffman part number.
② Use 8 to 1 horns ratio.
③ Drill new mounting hole(s).
④ Includes capacitor C98, resistors R104, R105, and R131.
⑤ Connect horizontal yoke damping network across terminals #3 and #7.
⑥ Use original horizontal yoke damping network if necessary.
⑦ Enlarge mounting hole.
⑧ Use terminals #1 and #2.
⑨ Use red and blue terminals.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	SEC.	REPLACEMENT DATA HOFFMAN PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T6	7.8KΩ	3-4Ω	HS157A-2	21006	A-3901	A-3846	26S42	S-22	

SPEAKER

ITEM No.	RATINGS SIZE	FIELD	V. C. IMP	REPLACEMENT DATA HOFFMAN PART No.	QUAM PART No.	RCA TYPE No	NOTES
SP1	4"	PM	3-4Ω	H9417	4A07	22S81	

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA HOFFMAN PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	59.75MC Trap	.9Ω		5346A				
L2	1st Video IF	.3ΩCT		5285A				
L3	47.25MC Trap	9Ω		5284A				Tapped
L4	2nd Video IF	.1Ω	.1Ω	5538	17-3004	TV-135	6234	
L5	3rd Video IF	.1Ω	.1Ω	5538				
L6	41.25MC Trap	6Ω		5438				
L7	4th Video IF	.1Ω	.1Ω	5538	17-5004	TV-135	6234	
L8	5th Video IF	.1Ω	.1Ω	5342A	17-5004	TV-135	6234	
L9	Series Peaking Coil	5.8Ω		5284A	19-3036	TV-130	6176	39 Microhenries, Note 1
L10	Shunt Peaking Coil	43Ω		5434A			4653	970 Microhenries, Note 1
L11	Series Peaking Coil	1Ω		5330A	19-4301		6154	210 Microhenries
L12	Shunt Peaking Coil	7.3Ω		5331A	19-3100	TV-131	6177	
L13	4.5MC Trap	1.6Ω		5332A	20-1004	TV-131	1468	
L14	1st Sound IF	1.5Ω		5330A				
L15	2nd Sound IF	1.5Ω		5332A	20-1004	TV-131	1468	
L16	Ratio Det.	16Ω	L. 52CT	5332A	17-3407	TV-115	6306	Tertiary Windings, T2
L17	RF Choke	.4Ω		5266	19-1003		4808	

Note 1. Coil may be wound on 10Meg resistor in some versions.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES PRI.	SEC.	REPLACEMENT DATA HOFFMAN PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	NOTES
L18	65Ω		5447	19-1576	TV-163	6210			28-5	

MODELS B1061, U, K1061, U, M1061U (Ch. 415, U)
HOFFMAN
RADIO CORP. OF COLORADO

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	HOFFMAN PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L19	.320A	28Ω	1.4HY	H5164A	C5037	C-2996	C-2326 ①	26C44 ①	C-17X

① Drill one new mounting hole.

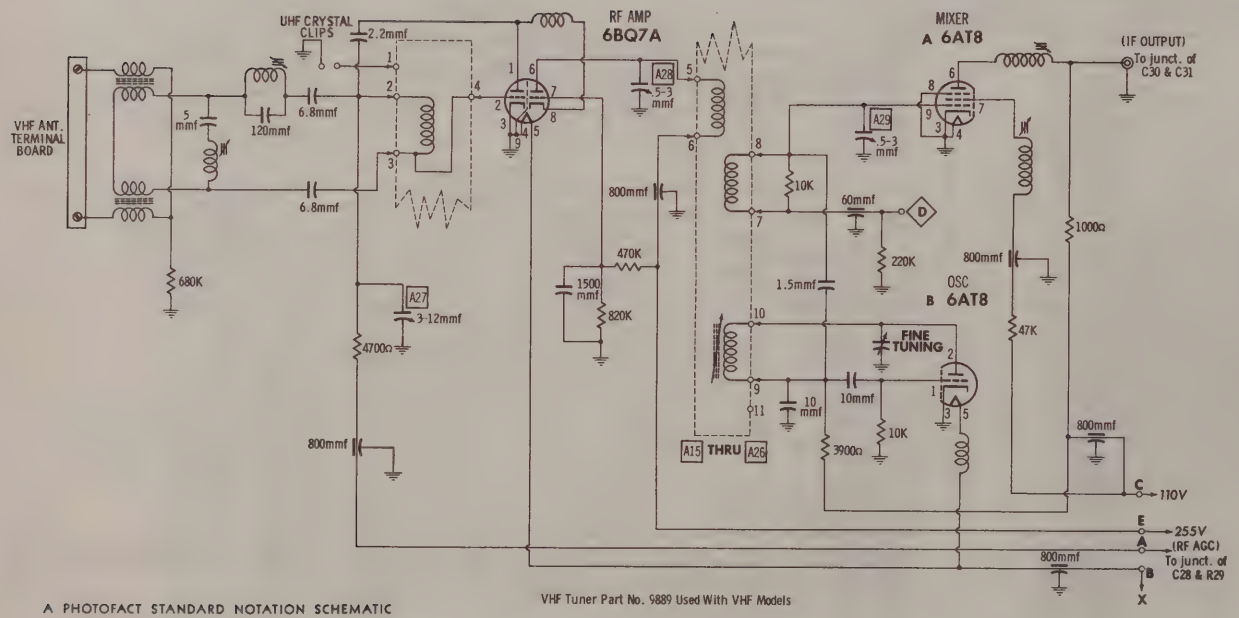
CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		HOFFMAN PART No.	SYLVANIA PART No.	
M1	1N82A	K1061U	1N82 or 1N82A	UHF Mixer (Clip in)

MISCELLANEOUS

ITEM No.	PART NAME	HOFFMAN PART No.	NOTES
M2	Dial Light		#47
M3	Tuner	9881 *	VHF-UHF Combination-Chassis 415-U
M4	Tuner	9889	VHF-Chassis 415
M5	Trap		VHF Ant. Input Filter
M6	Focus Magnet	9886 †	Includes Centering Device
M7	Ion Trap	9713	
	Cabinet	7944	Black-All Models
	Cabinet	7946	Mahogany-All Models
	Cabinet	7945	Oak-All Models
	Knob	H-3859-A	Brightness
	Knob	H-33763	VHF Channel Selector-Models K1061, B1061, M1061
	Knob	H-3834-A	Contrast
	Knob	H-3832-A	Vert. Hold
	Knob	H-3835-A	On-Off-Volume
	Knob	H-33764	Fine Tuning-Models K1061, B1061, M1061
	Knob	H-33772	UHF Tuner Assy. (Front Section) Models K1061U, B1061U, M1061U
	Knob	H-33773	UHF Tuner Assy. (Center Section) Models K1061U, B1061U, M1061U
	Knob	H-33767	UHF Tuner Assy. (Rear Section) Models K1061U, B1061U, M1061U
	Safety Glass	804	
	Mask	22066	

* Alternate Part #'s 9861 and 9858.
† Alternate Part # 9882.



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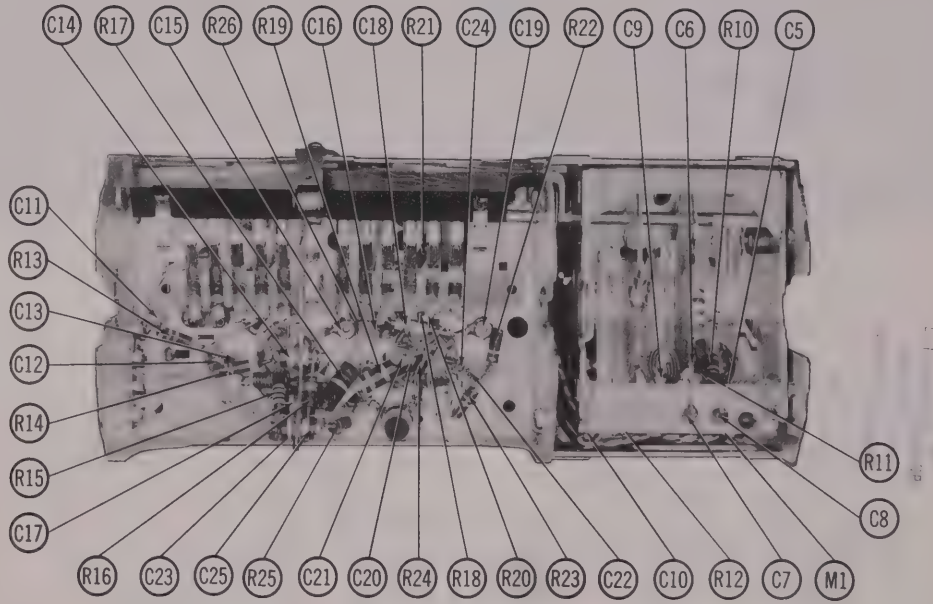
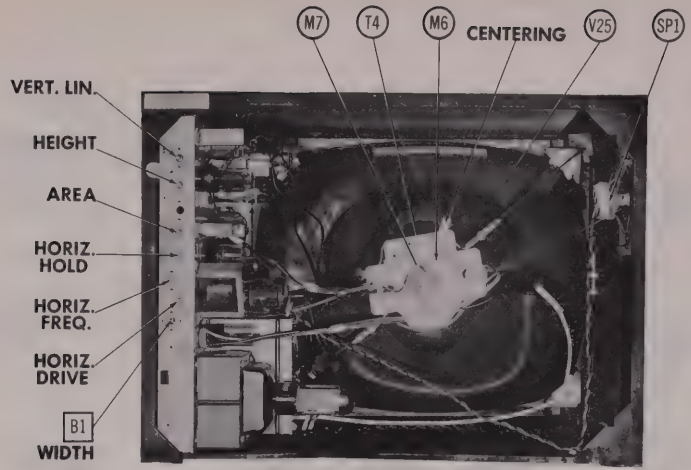
VHF Tuner Part No. 9889 Used With VHF Models

ALTERNATE TUNER SCHEMATIC



RF TUNER-BOTTOM VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal drive control (R9) as far clockwise as possible without the presence of a vertical white line or compression near the center of the picture.

Adjust the horizontal frequency (B1) until the picture synchronizes horizontally. Switch off channel and back again if the picture loses sync slightly retouch the horizontal frequency.
Adjust the horizontal width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

RCA VICTOR
MODEL 7-BT-10K (Ch. RC-1156)

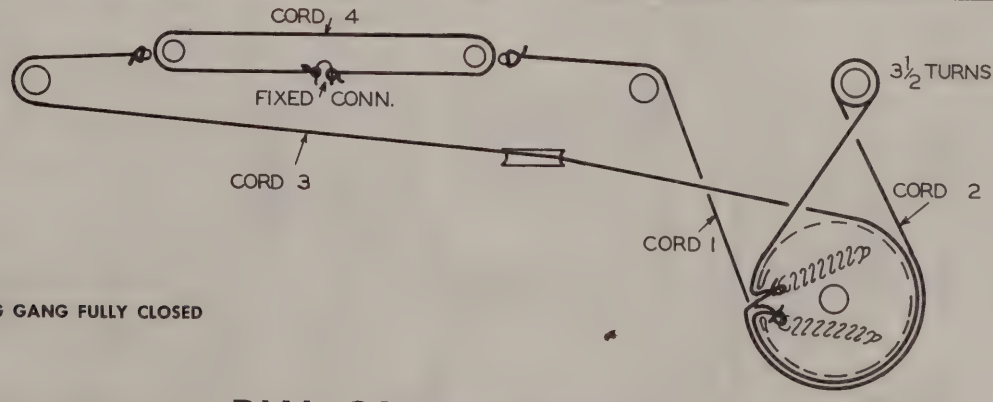
RCA VICTOR
MODEL 7-BT-10K (Ch. RC-1156)

TRADE NAME	RCA Victor Model 7-BT-10K (Ch. RC-1156)
MANUFACTURER	RCA Victor Radio & "Victrola" Div., Radio Corp. of America, Camden 8, N. J.
TYPE SET	Battery Operated Portable Transistor AM Superheterodyne Receiver
POWER SUPPLY	9 Volt "A" Battery
RATING	10MA @ 9 Volts DC
TUNING RANGE—BROADCAST	540KC-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.005MFD	High side to antenna lug on tuning gang. Low side to chassis.	455KC (400~ Mod.)	Point of non-interference	Across Voice Coil	A1, A2, A3	Adjust for maximum output.
2.		Loop	1620KC	Tuning gang fully open	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune to 1400KC signal	"	A5	"
4.		"	600KC	Tune to 600KC signal	"	A6	Adjust for maximum output while rocking tuning gang.



TUNING GANG FULLY CLOSED

DIAL CORD STRINGING

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PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	USE	TYPE	NOTES
X1	Converter	235	
X2	1st IF Amplifier	234	
X3	2nd IF Amplifier	234	
X4	AF Amplifier	2N109	
X5	AF Amplifier	2N109	
X6	Output	2N109	
X7	Output	2N109	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	100	25	101724						R2249 *
C2	25	10	101614	SRE25V25	EC25-10		ML-30-15		TE-1118
C3	10	10	101613	PWE10V10	EC10-10		ML-10-15		TE-1114
C4	100	25	101724						R2249 *
C5	25	10	101614	SRE25V25	EC25-10		ML-30-15		TE-1118
C6	10	10	101613	PWE10V10	EC10-10		ML-10-15		TE-1114
C7	100	25	101724						R2249 *

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C8	.1	200	79251	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C9	.1	200	79251	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C10	.047	200	78921A	BPD-05	DF-503	CUB2S47		PT4147	2TM-S47	
C11	.1	200	79251	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C12	.1	200	79251	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C13	.1	200	79251	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C14	.1	200	79251	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C15	.1	200	79251	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C16	.047	200	78921A	BPD-05	DF-503	CUB2S47		PT4147	2TM-S47	
C17	.0047	200	100083	BPD-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	Note 1
C18	.1	200	79251	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	

Note 1. Later versions use .022MFD in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1500Ω		101655				UE125S	Volume & Switch
B	2500Ω							

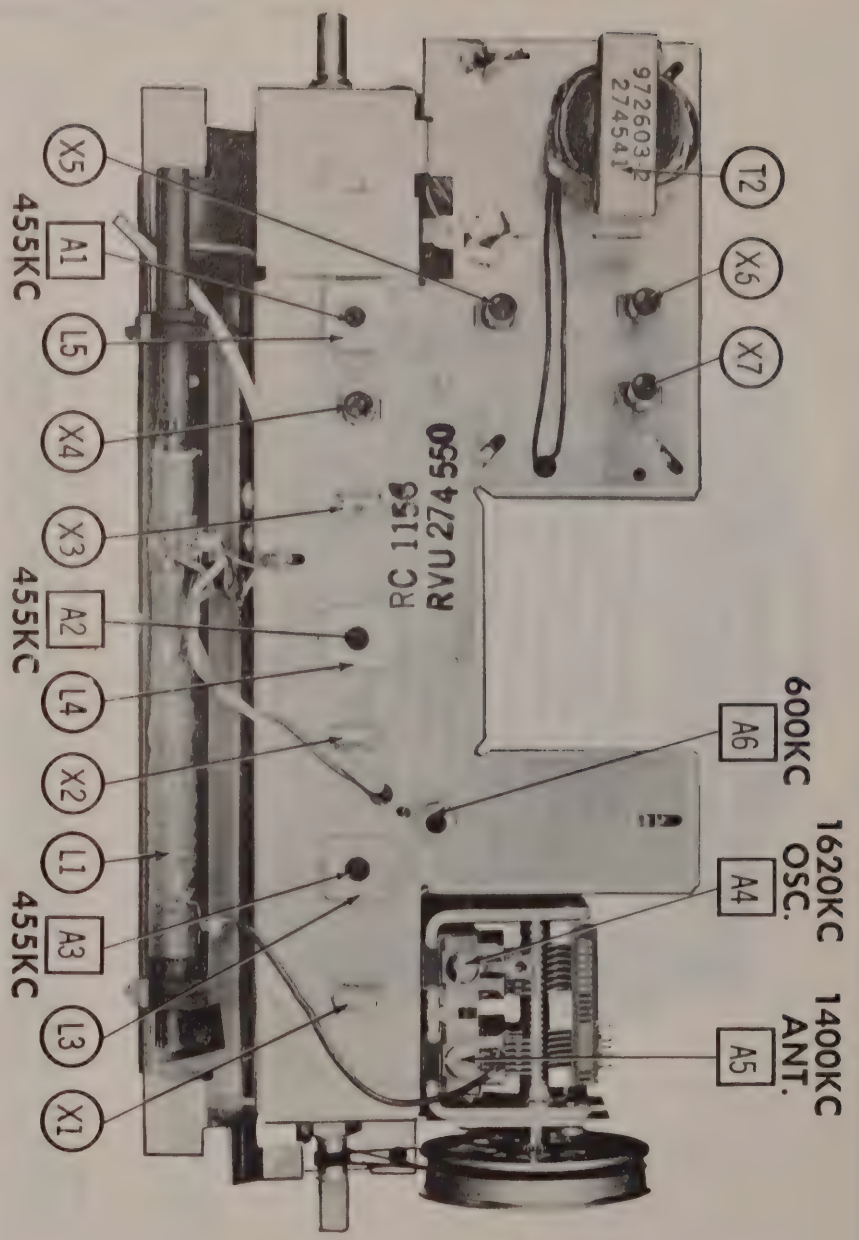
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RCA Victor PART No.	IRC PART No.	
R2	470Ω		502147	BTS-470	
R3	390Ω		30498	BTS-390	
R4	1500Ω		502215	BTS-1500	
R5	3300Ω		502233	BTS-3300	
R6	22K		502322	BTS-22K	
R7	6800Ω		502268	BTS-6800	
R8	220Ω		502122	BTS-220	
R9	2200Ω		502222	BTS-2200	
R10	15K		502315	BTS-15K	
R11	470Ω		502147	BTS-470	
R12	560Ω		502146	BTS-560	
R13	4700Ω		502247	BTS-4700	
R14	56K		502356	BTS-56K	
R15	4700Ω		502247	BTS-4700	
R16	100Ω		502110	BTS-100	
R17	1000Ω		502210	BTS-1000	
R18	22K		502322	BTS-22K	
R19	4700Ω		502247	BTS-4700	
R20	1000Ω		502210	BTS-1000	Note 1
R21	100Ω		502110	BTS-100	
R22	12K		502312	BTS-12K	Note 2
R23	390Ω		30498	BTS-390	
R24	270Ω (3) 72° F 40Ω (4) 160° F		101822		Note 3
R25	33K			BTS-33K	Note 4

Note 1. Some versions use 560Ω in this application.
Note 2. Some versions use 10K in this application.
Note 3. Temperature compensated resistor.
Note 4. Not used in early versions. Later versions may use 15K in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO DRIVER)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA: RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	760Ω	510Ω CT	101656						
	Turns Ratio	1½ :1							

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA: RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	460Ω	3-4Ω	101657						

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA: RCA Victor PART No.	QUAM PART No.	RCA TYPE No.	NOTES
SP1	4"x 6"	PM	3-4Ω	101654	46A07	246S2	

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: RCA Victor PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	Loop Stick	.1Ω	1.3Ω	101650	14-9009			
L2	Osc. Coil	.3Ω	6.2Ω*	101661	14-9010			* Tapped @ .4Ω
L3	1st IF Trans.	8Ω ■	.3ΩCT	101658	16-9007			■ Tapped @ 2.5Ω
L4	2nd IF Trans.	8Ω ▲	.3ΩCT	101659	16-9008			▲ Tapped @ 1.5Ω
L5	3rd IF Trans.	7.5Ω †	.6Ω	101660	16-9009			† Tapped @ 1.2Ω

BATTERIES

ITEM No.	VOLTAGE	RCA Victor PART No.	REPLACEMENT DATA: EVEREADY "A"	EVEREADY "B"	EVEREADY "A-B"	BURGESS "A"	BURGESS "B"	BURGESS "A-B"	INSTALLATION NOTES
M1	9V "A"	VS-301	2506			D6PI			

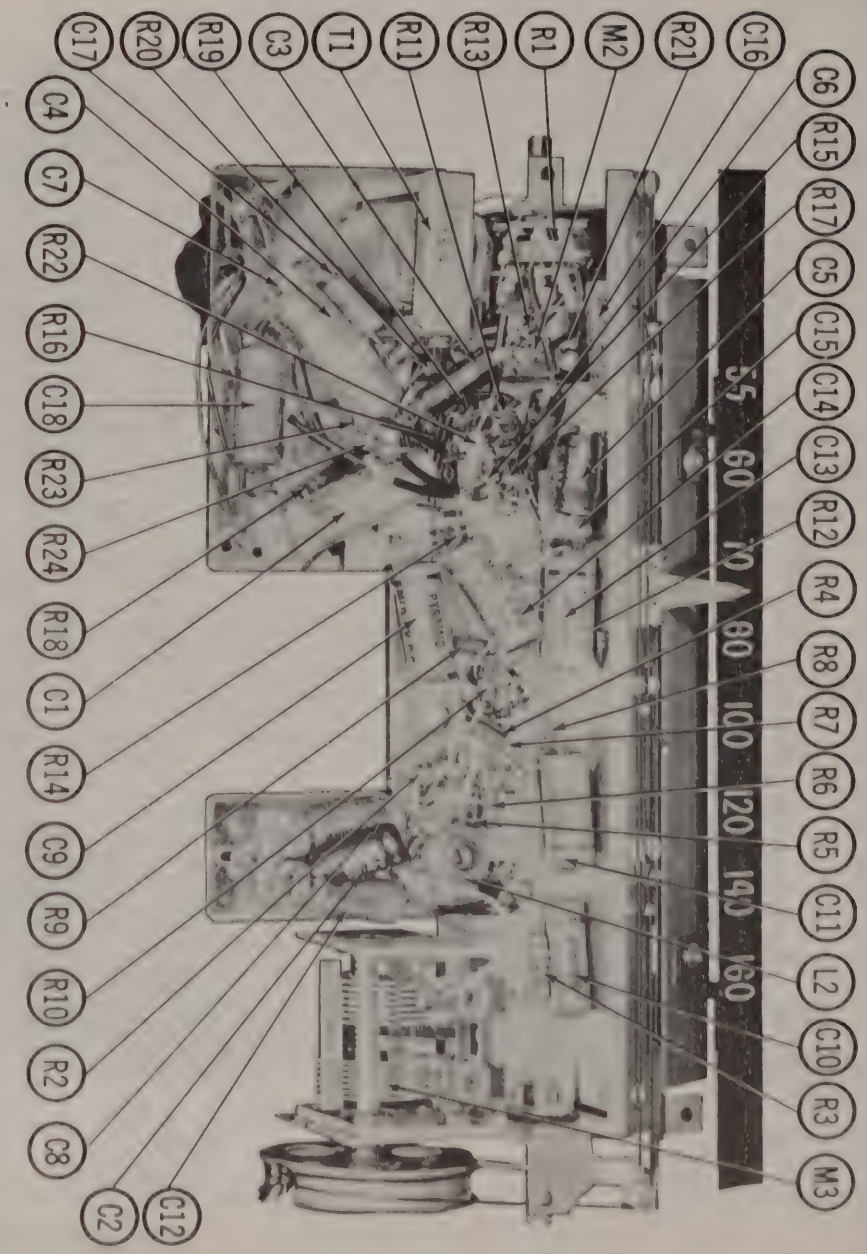
CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: RCA Victor PART No.	SYLVANIA PART No.	NOTES
M2	1N295	101615	1N60	Audio Det. (Pigtail)

MISCELLANEOUS

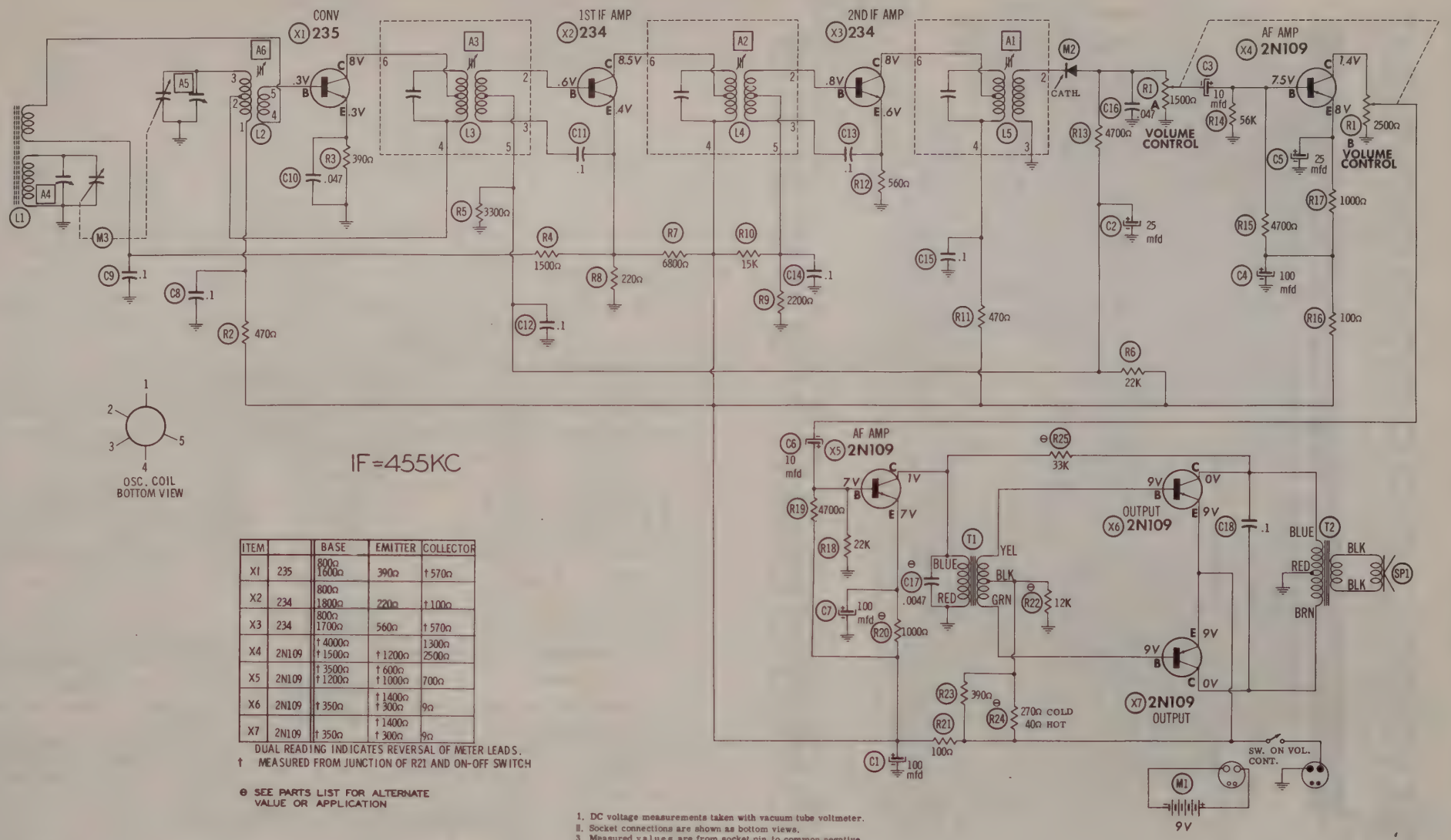
ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M3	Tuning Cap.	101653	2 Gang (17-185MMF, 17-100MMF)
	Knob	101662	Control (2 used)
	Handle	101646	
	Dial	101651	
	Pointer	101644	

CHASSIS—BOTTOM VIEW



SET 329 FOLDER 10

RCA VICTOR
MODEL 7-BT-10K (Ch. RC-1160)



ITEM		BASE	EMITTER	COLLECTOR
X1	235	800Ω 1600Ω	390Ω	†570Ω
X2	234	800Ω 1800Ω	220Ω	†100Ω
X3	234	800Ω 1700Ω	560Ω	†570Ω
X4	2N109	†4000Ω †1500Ω	†1200Ω	1300Ω 2500Ω
X5	2N109	†3500Ω †1200Ω	†600Ω †1000Ω	700Ω
X6	2N109	†350Ω	†1400Ω †300Ω	9Ω
X7	2N109	†350Ω	†1400Ω †300Ω	9Ω

DUAL READING INDICATES REVERSAL OF METER LEADS.
† MEASURED FROM JUNCTION OF R21 AND ON-OFF SWITCH

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

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RAYTHEON
MODEL T2500 (Ch. 7RT4)

RAYTHEON
MODEL T2500 (Ch. 7RT4)

TRADE NAME	Raytheon Model T2500 (Ch. 7RT4)
MANUFACTURER	Raytheon Mfg. Co., TV & Radio Div., 5921 W. Dickens Ave., Chicago 39, Illinois
TYPE SET	Battery Operated Portable Transistor AM Superheterodyne Receiver
POWER SUPPLY	6 Volt "A" Battery (or) 4 1.5 cells RATING 14 MA @ 6 Volts DC
TUNING RANGE—BROADCAST	540KC-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.5MFD	High side to base of CK760 (X1). Low side to chassis.	455KC (400~Mod)	Tuning gang fully open.	Across voice coil	A1, A2, A3	Adjust for maximum output.
2.	"	"	1620KC	"	"	A4	"
3.		Loop	1400KC	Tune to 1400KC signal	"	A5	Adjust for maximum output while rocking gang.

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PARTS LIST AND DESCRIPTIONS

RAYTHEON
MODEL T2500 (Ch. 7RT4)

TRANSISTORS

ITEM No.	USE	TYPE	NOTES
X1	Mixer	CK760	Note 1
X2	Oscillator	CK760	Note 2
X3	IF Amplifier	CK760	Note 1
X4	1st. AF Amplifier	2N133	Note 3
X5	2nd. AF Amplifier	2N130	Note 3
X6	Output	2N138	Note 3
X7	Output	2N138	Note 3

Note 1. Type 2N112 may be used in this application.
Note 2. Type 2N112 or CK759/2N111 may be used in this application.
Note 3. Type CK721/2N131 may be used in this application.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	RAYTHEON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	50	6	8C-24903	SRE6V50	BBR50-6		TD-50-6	MMT-650	TE-1101
C2	2	6	8C-25013	PWE6V2	EC2-6	TAW12A2	ML-2-6		TE-1081
C3	2	6	8C-25445	PWE6V2	EC2-6	TAW12A2	ML-2-6		TE-1081
C4	50	6	8C-24903	SRE6V50	BBR50-6		TD-50-6	MMT-650	TE-1101
C5	50	6	8C-24903	SRE6V50	BBR50-6		TD-50-6	MMT-650	TE-1101
C6	50	6	8C-24903	SRE6V50	BBR50-6		TD-50-6	MMT-650	TE-1101

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RAYTHEON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C7	.1	200	8M-25399	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C8	1500		8G-24994	1464-0015		1R5D15	811-152	MCE456	MS-215	
C9	.047	200	8D-21823	BPD-05	DF-503	CUB2S47		PT4147	2TM-S47	
C10	4700		8G-25809	DI-0047	DD-472	K079	811-0047	DC-525	5GA-D47	
C11	390		8N2-239	1469-00039		5R5T39			MS-339	
C12	.068	200	8D-24904	P288N-068		CUB4S68			4TM-S68	
C13	10000		8G-25810	BPD-01	DD-103	K082	811-01.	DC-511	5HK-S1	
C14	.068	200	8D-24904	P288N-068		CUB4S68			4TM-S68	
C15	7		8G-24973			Z014				
C16	390		8N2-239	1469-00039		5R5T39			MS-339	
C17	.068	200	8D-24904	P288N-068		CUB4S68			4TM-S68	
C18	.047	200	8D-21823	BPD-05	DF-503	CUB2S47		PT4147	2TM-S47	
C19	22		8G-13909	NP0-SI22	TCZ-22	TZ14	NP0K-220		5TCC-Q22	
C20	390		8N2-239	1469-00039		5R5T39			MS-339	
C21	2000		8G-19522	1464-002		1R5D2			MS-22	
C22	.1	200	8M-26001	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C23	.022	200	8D-21822	BPD-02	DF-203	CUB4S22	817-02	PT4122	2TM-S22	
C24	.1	200	8K-23084	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	

CONTROLS

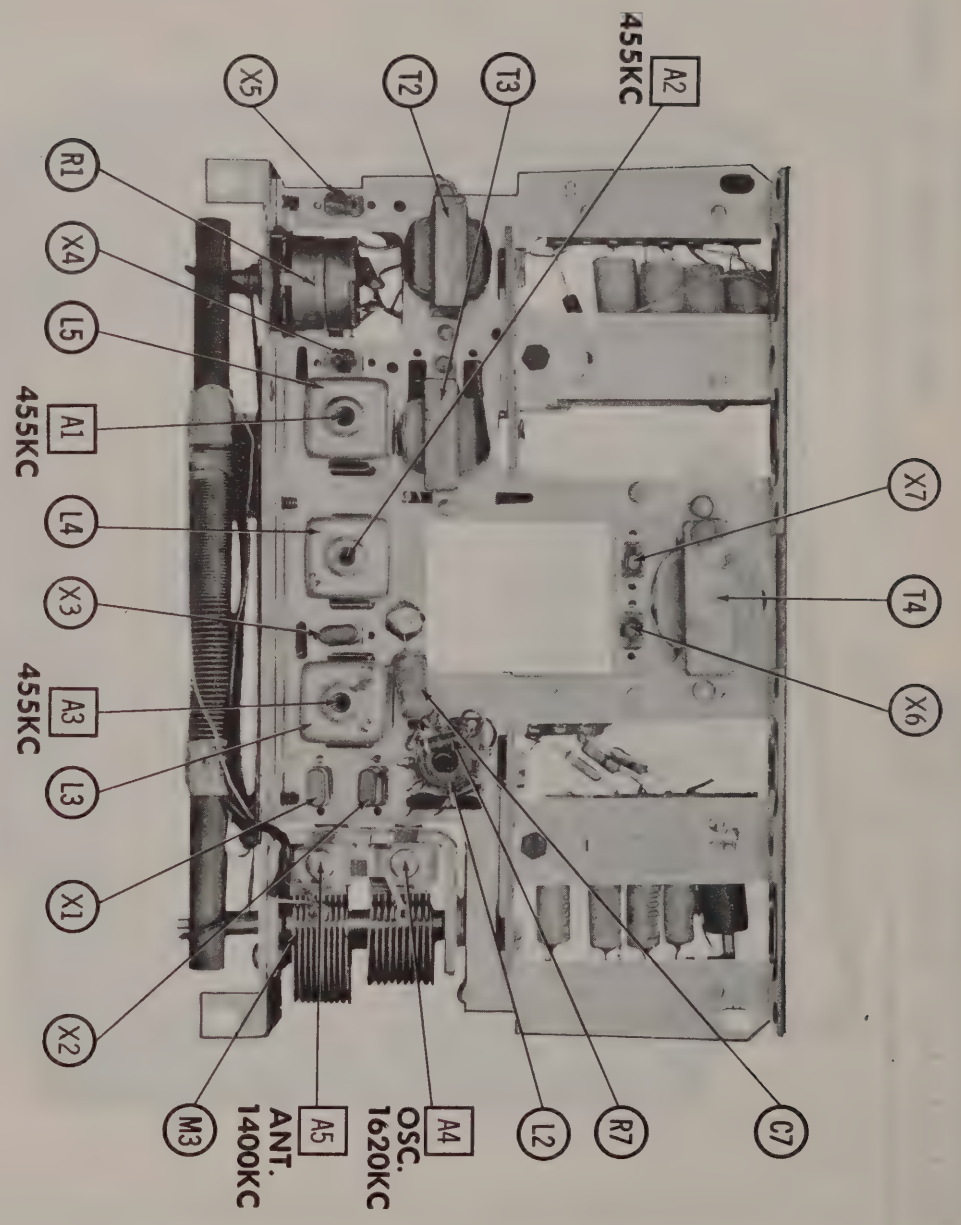
ITEM No.	RATING RESISTANCE	RATING WATTS	RAYTHEON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	10K	½	B10A-25723	AB-15	A47-10K-Z	Q13-116	U-18	Volume
B	Shaft		Not Req.	AK-3	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	KB-1	SWE-12	76-1	US-26	Attach to R1A

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	RAYTHEON PART No.	IRC PART No.	NOTES
R2	220K 5%		9B1-215	BTS-220K 5%	
R3	1000Ω 5%		9B1-159	BTS-1000 5%	
R4	4700Ω 5%		9B1-175	BTS-4700 5%	
R5	1500Ω 5%		9B1-163	BTS-1500 5%	
R6	560Ω 5%		9B1-153	BTS-560 5%	
R7	3900Ω 5%		9B1-173	BTS-3900 5%	
R8	270Ω 5%		9B1-145	BTS-270 5%	
R9	100Ω 5%		9B1-135	BTS-100 5%	
R10	1500Ω 5%		9B1-163	BTS-1500 5%	
R11	3900Ω 5%		9B1-173	BTS-3900 5%	
R12	2700Ω 5%		9B1-169	BTS-2700 5%	
R13	1000Ω 5%		9B1-159	BTS-1000 5%	
R14	1000Ω 5%		9B1-159	BTS-1000 5%	
R15	47K 5%		9B1-199	BTS-47K 5%	
R16	22K 5%		9B1-191	BTS-22K 5%	
R17	47K 5%		9B1-199	BTS-47K 5%	
R18	470Ω 5%		9B1-151	BTS-470 5%	
R19	4300Ω 5%		9B1-174	BTS-4300 5%	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RAYTHEON PART No.	IRC PART No.	
R20	3300Ω 5%		9B1-171	BTS-3300 5%	
R21	750Ω 5%		9B1-156	BTS-750 5%	
R22	680Ω 5%		9B1-155	BTS-680 5%	
R23	220K 5%		9B1-215	BTS-220K 5%	
R24	680Ω 5%		9B-155	BTS-680 5%	
R25	3300Ω 5%		9B1-171	BTS-3300 5%	
R26	10K		9B1-74	BTS-10K	
R27	2700Ω 5%		9B1-169	BTS-2700 5%	
R28	100Ω 5%		9B1-135	BTS-100 5%	
R29	5.6Ω		9C1-1072	BW½-5.6	
R30	100Ω 5%		9B1-50	BTS-100 5%	

TRANSFORMER (AUDIO)

ITEM No.	Resistance		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RAYTHEON PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	490Ω	150Ω*	12C-24929-1 ①						Input Interstage Driver
T2	490Ω	150Ω*	12C-24929-1②						
T3	490Ω	150Ω*	12C-24929-1③						

① Alternate part #12C-25652.
② Alternate part #12C-25653.
③ Alternate part #12C-25654.
* Center tap.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RAYTHEON PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T4	650Ω	16.8Ω	12C-24928						

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	RAYTHEON PART No.	QUAM PART No.	RCA TYPE No.	
SP1	5 1/4"	PM	6-8Ω	C18A-26366	52A1Z5.3		
SP2	5 1/4"	PM	6-8Ω	C18A-26367	52A1Z5.7		

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	RAYTHEON PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Stick	.2Ω	.7Ω	13E-25614				
L2	Osc. Coil	.3Ω	6Ω *	13D-25683				* Tapped ⓐ 2.5Ω-Tertiary winding -.2Ω
L3	1st. IF Trans.	1.6Ω	.4Ω	13A-25806				
L4	2nd. IF Trans.	1.6Ω		13B-25807				Tapped ⓐ .6Ω
L5	3rd. IF Trans.	1.6Ω		13B-25807				Tapped ⓐ .6Ω

BATTERIES

ITEM No.	VOLTAGE	RAYTHEON PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	6V "A" Pack or 6V "A"	22C-26414	274 950				4D4 2R		Connect 4 in series

CRYSTAL DIODES

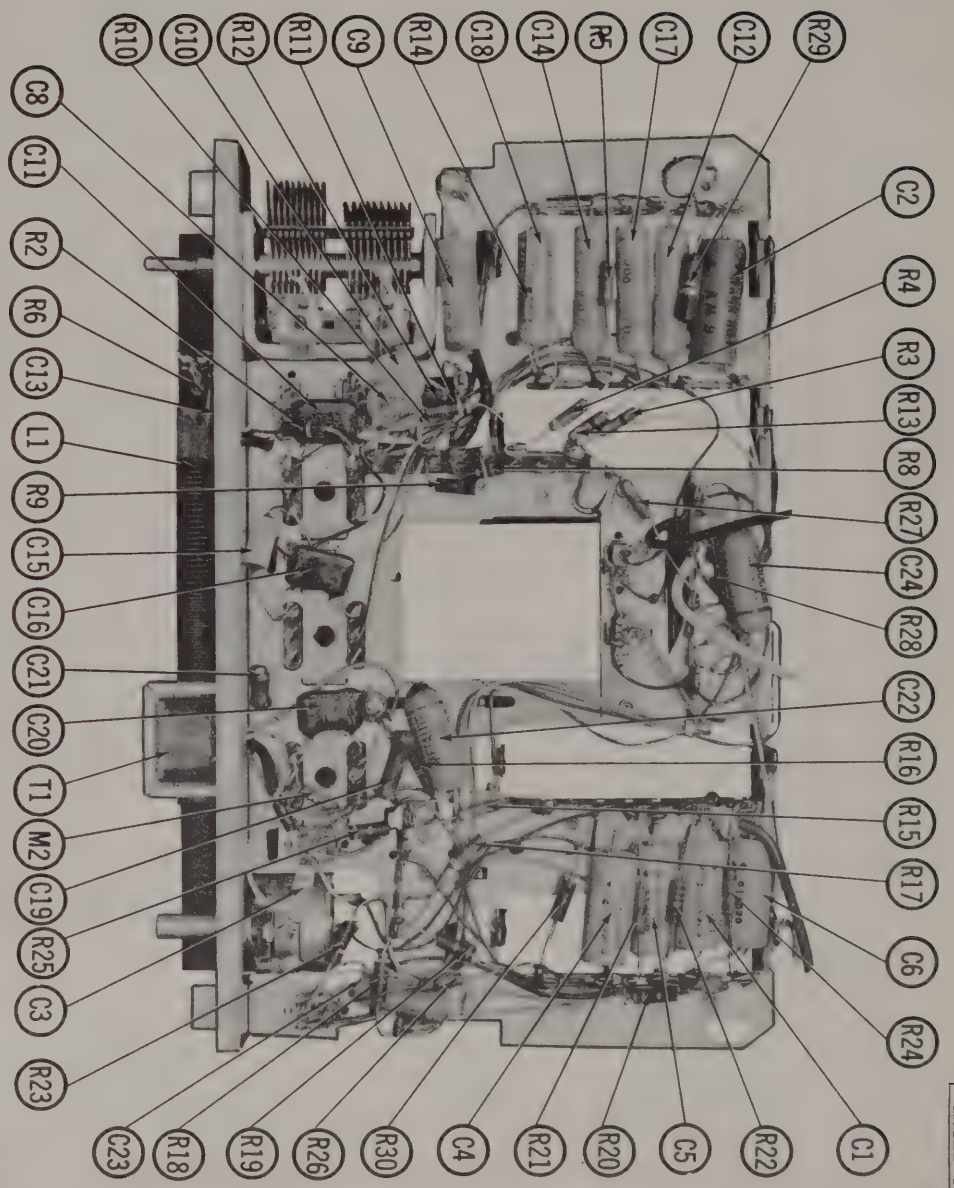
ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N295 *	8M-21959	1N60	Audio Detector (Pigtail)

* Some versions may use crystal diode type CK-706A in this application.

MISCELLANEOUS

ITEM No.	PART NAME	RAYTHEON PART No.	NOTES
M3	Tuning Cap.	8A-24879	2 Gang (26-175MMF, 18-130MMF)
	Case	24D-26362-A203	
	Handle	23A-26372-A203	

CHASSIS—BOTTOM VIEW



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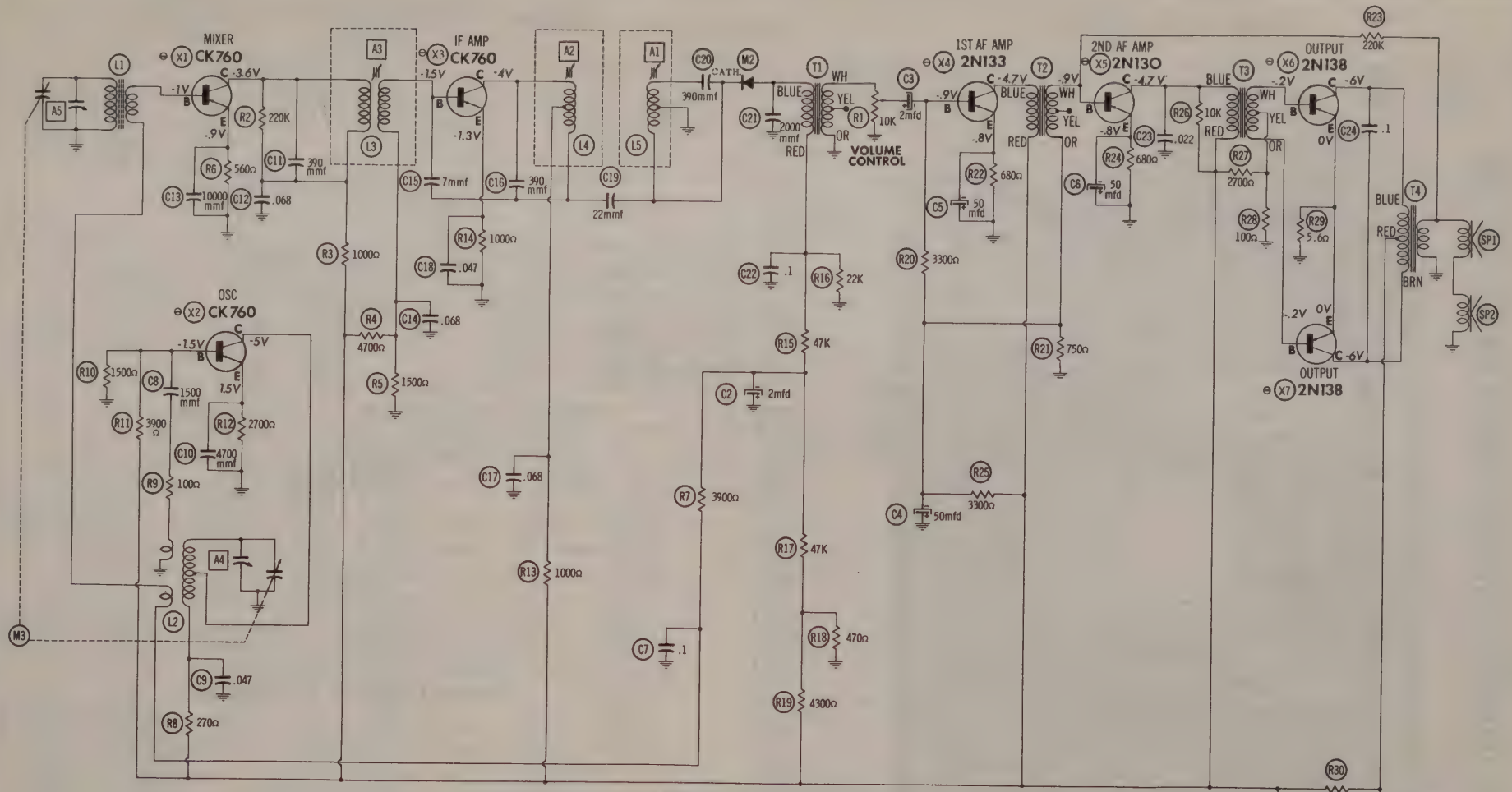

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

IF=455KC

ITEM		BASE	EMITTER	COLLECTOR
X1	CK760	500Ω 11K	500Ω	† 1100Ω
X2	CK760	500Ω 1000Ω	2700Ω	† 370Ω
X3	CK760	1000Ω 1500Ω	1000Ω	† 1100Ω
X4	2N133	1000Ω 3700Ω	680Ω	† 600Ω
X5	2N130	500Ω 750Ω	680Ω	† 600Ω
X6	2N138	46Ω 140Ω	5.6Ω	† 4.6Ω
X7	2N138	46Ω 140Ω	5.6Ω	† 4.6Ω

DUAL READING INDICATES REVERSAL OF METER LEADS.
† MEASURED FROM JUNCTION OF R30 AND ON-OFF SWITCH.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

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PHOTOFACT* Folder

SETCHELL-CARLSON
MODELS P61 (Ch. C100-Late), 611 (Ch. C200)

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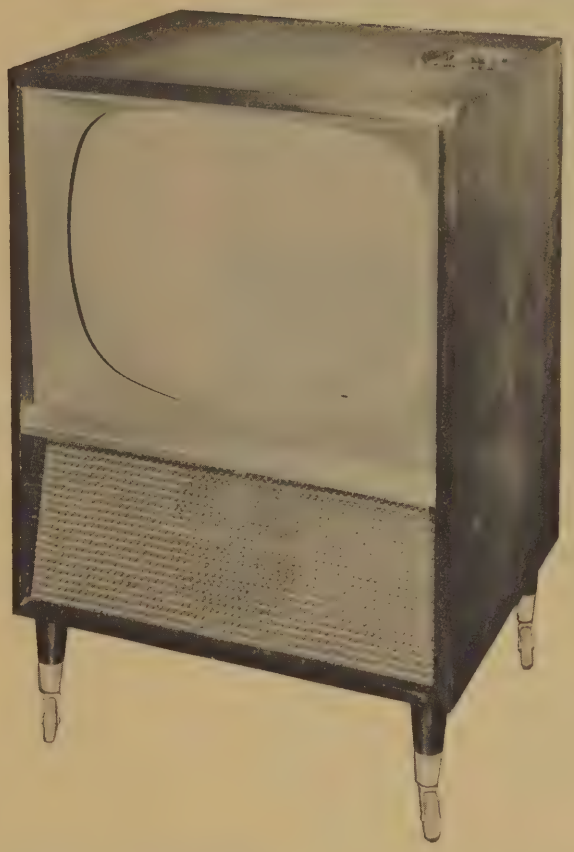

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SETCHELL-CARLSON
MODELS P61 (Ch. C100-Late), 611 (Ch. C200)

SETCHELL-CARLSON MODEL 611

TRADE NAME	Setchell-Carlson Models P61 Portable (Ch. C100 Late), 611 Consolette (Ch. C200)
MANUFACTURER	Setchell-Carlson Inc., New Brighton, Minn.
TYPE SET	Television Receiver
TUBES	Nineteen
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 1.4 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 48.75MC, Sound IF 44.25MC (Intercarrier)

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SETCHELL-CARLSON
MODELS P61 (Ch. C100-Late), 611 (Ch. C200)

MODEL	CHASSIS
611	C200

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 4 push on type control knobs from top panel of cabinet.

2. Remove 8 wood screws. Remove rear cover.

3. Remove picture tube socket, speaker plug, yoke plug and H. V. lead.

4. Remove 4 chassis bolts. Remove chassis.

5. Remove 4 speaker nuts. Remove speaker.

NOTE: If it is necessary to remove the chassis for servicing, it is also necessary to remove the speaker. The Audio Output trans. is mounted on the speaker and must be connected into the receiver for proper operation.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 3 wood screws holding metal name plate at the bottom edge of the safety glass. Remove plate and safety glass. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjust the horizontal hold control to synchronize the picture horizontally. If the horizontal hold control will not synchronize the picture, replace V14 (12AU7A).

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L9) located on top of the chassis.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

SETCHELL-CARLSON
MODELS P61 (Ch. C100-Late), 611 (Ch. C200)

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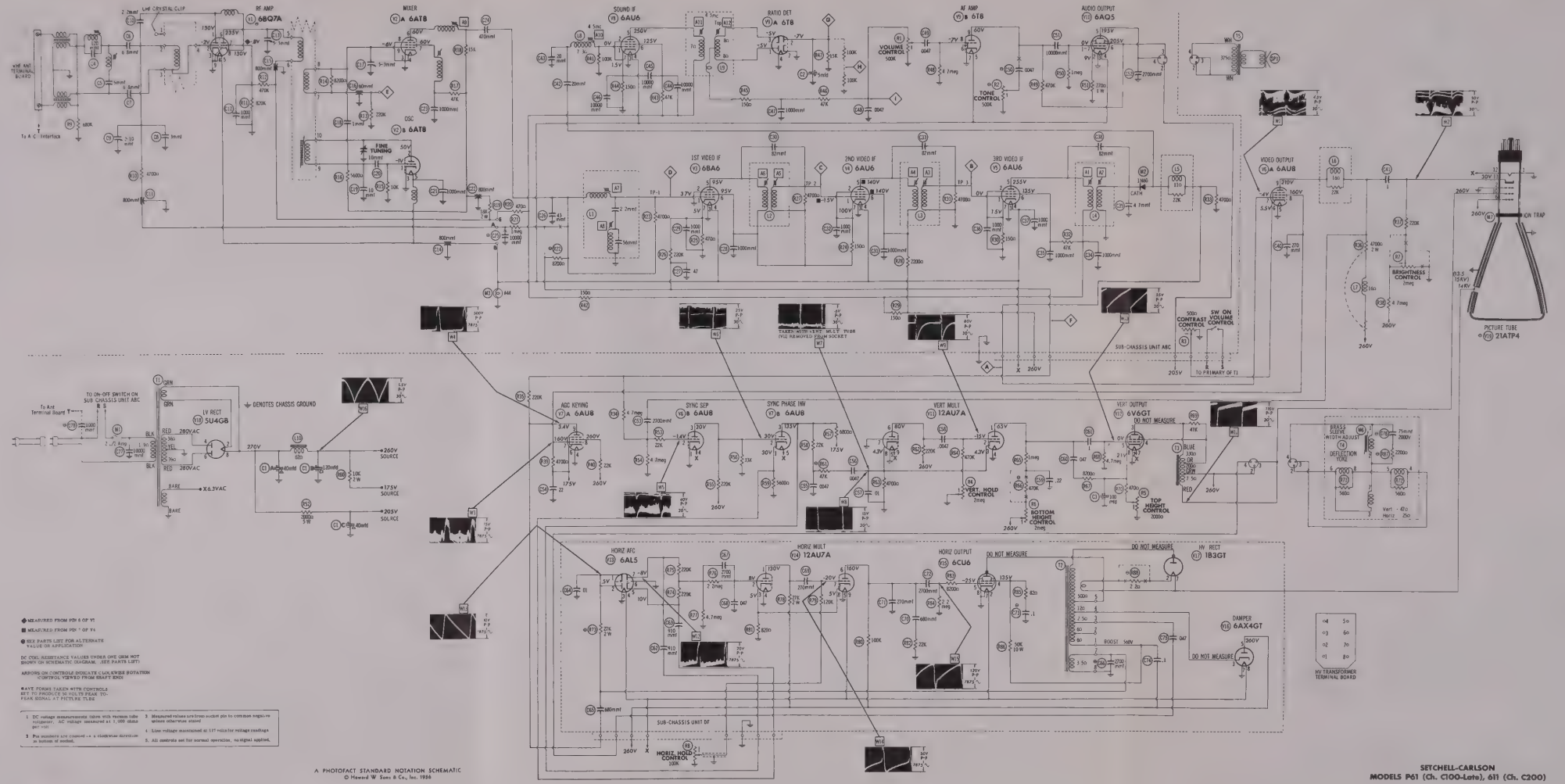
DATE 9-56 SET 329 FOLDER 12


RF AMP V1 6BQ7A
MIXER V2A 6AT8
OSC V2B 6AT8
SOUND IF V3 6AU6
RATIO DET V9A 6T8
AF AMP V9B 6T8
AUDIO OUTPUT V10 6AQ5
1ST VIDEO IF V7 6BA6
2ND VIDEO IF V4 6AU6
3RD VIDEO IF V5 6AU6
VIDEO OUTPUT V6A 6AU8
AGC KEYING V7A 6AU8
SYNC SEP V6B 6AU8
SYNC PHASE INV V8B 6AU8
VERT MULT V11 12AU7A
VERT OUTPUT V12 6V6GT
HORIZ AFC V13 6AL5
HORIZ MULT V14 12AU7A
HORIZ OUTPUT V15 6CU6
HV RECT V17 1B3GT
DAMPER V18 6AX4GT
LV RECT V19 5U4GB
PICTURE TUBE V19 21ATP4
ION TRAP
VOLUME CONTROL 500K
TONE CONTROL 500K
BRIGHTNESS CONTROL 2meg
CONTRAST CONTROL 500K
SW ON VOLUME CONTROL
VERT HOLD CONTROL 2meg
BOTTOM HEIGHT CONTROL 2meg
TOP HEIGHT CONTROL 20000
HORIZ HOLD CONTROL 100K
FINE TUNING 100mmf
BRASS SLEEVE WIDTH ADJUST
DEFLECTION YOKE
SUB-CHASSIS UNIT ABC
SUB-CHASSIS UNIT DF
TO ON-OFF SWITCH ON SUB CHASSIS UNIT ABC
To Ant Terminal Board
To A-C Interlock
DENOTES CHASSIS GROUND
X6.3VAC
260V SOURCE
175V SOURCE
205V SOURCE
TO PRIMARY OF T1
DO NOT MEASURE
HV TRANSFORMER TERMINAL BOARD
MEASURED FROM PIN 6 OF V1
MEASURED FROM PIN 7 OF V4
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM. SEE PARTS LIST
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION CONTROL VIEWED FROM SHAFT END
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 90 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated
4. Line voltage maintained at 117 volts for voltage readings
5. All controls set for normal operation, no signal applied.

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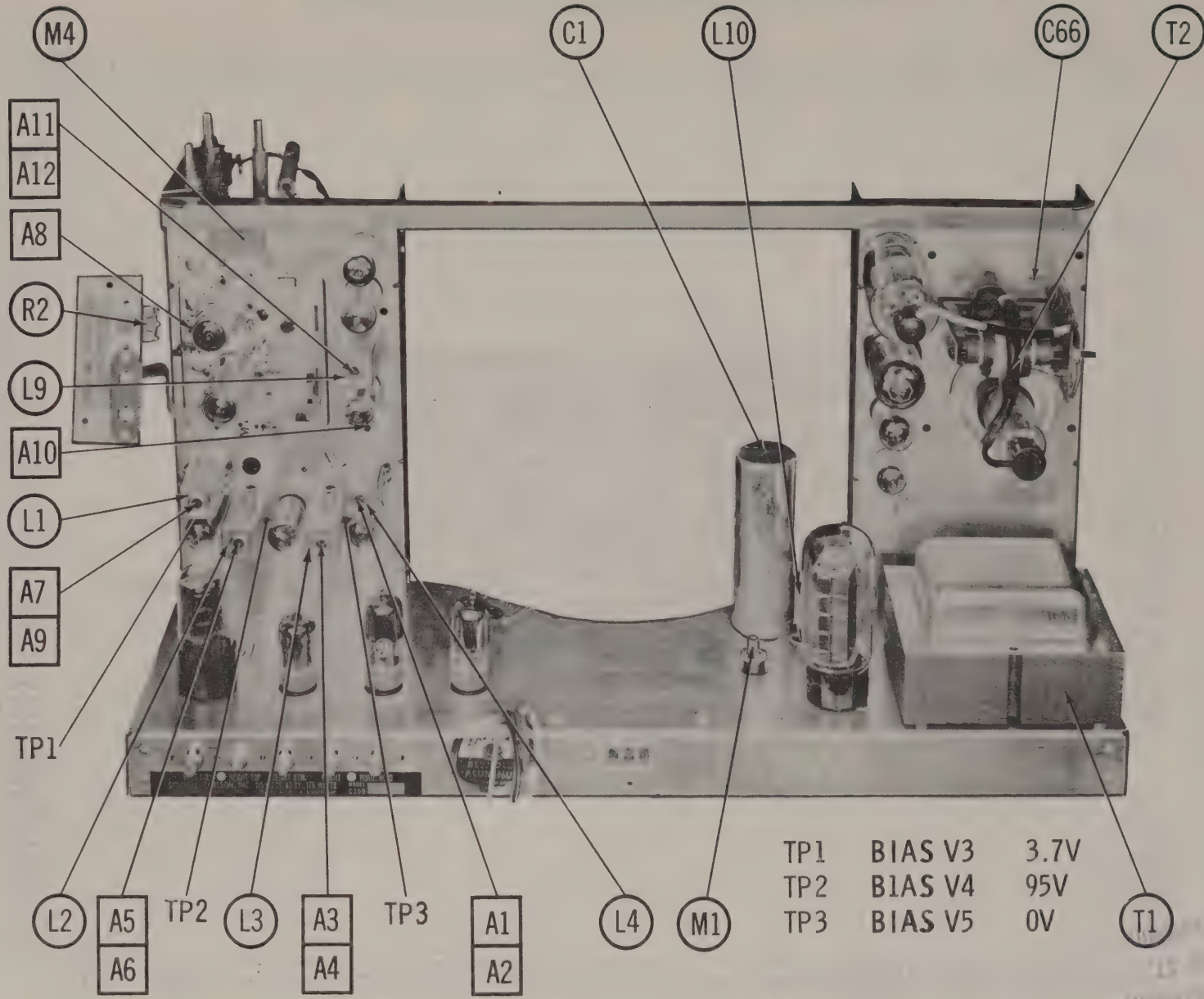
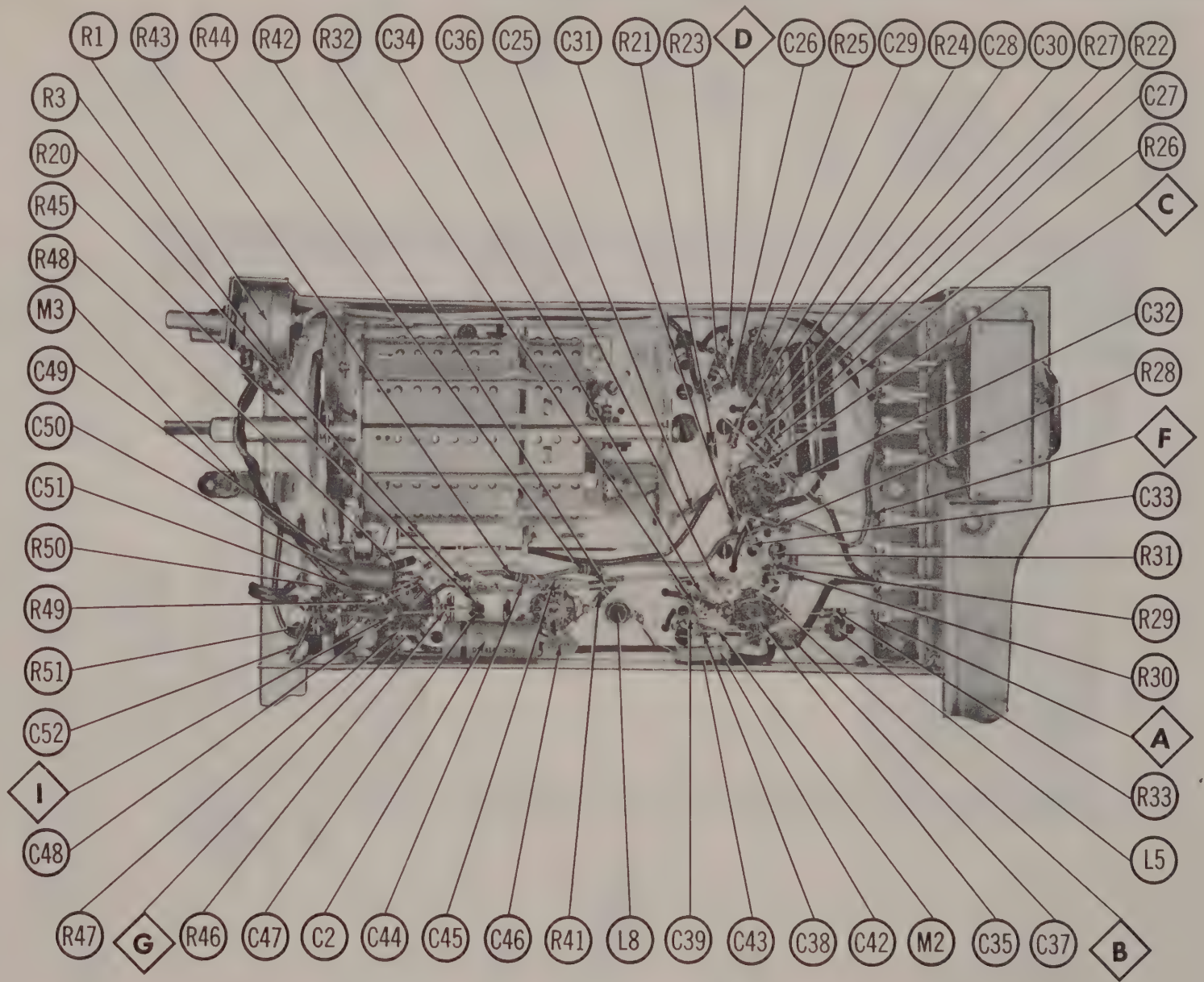
SETCHELL-CARLSON
MODELS P61 (Ch. C100-Late), 611 (Ch. C200)

SETCHELL-CARLSON
MODELS P61 (Ch. C100-Late), 611 (Ch. C200)



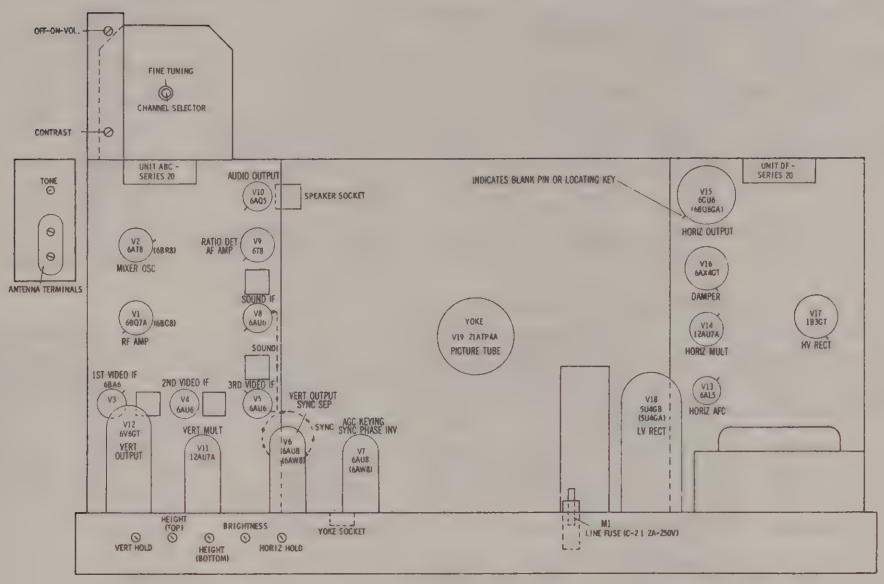
CHASSIS-REAR VIEW

SETCHELL-CARLSON
MODELS P61 (Ch. C100-Late), 611 (Ch. C200)



SUB-CHASSIS ABC UNIT-BOTTOM VIEW

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V18, Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V6, V7, V19
Has pic, no sound - V8, V9, V10
Overloaded picture - V7

SYNC FAILURE
No vert. sync - V7, V11
No horiz. sync - V7, V13, V14
No vert. or horiz. sync - V6, V7

SWEEP FAILURE
No raster, has sound - V14, V15, V16, V17, V19
No vertical deflection - V11, V12
Poor vert. linearity or foldover - V11, V12
Poor horiz. linearity or foldover - V14, V15, V16
Narrow picture - V14, V15, V16, V17, V18
Vert. off freq. - V7, V11
Horiz. off freq. - V7, V13, V14

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TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6BQ7A	Note 1
V2	Mixer-Oscillator	6AT8	Note 2
V3	1st. Video IF Amplifier	6BA6	
V4	2nd. Video IF Amplifier	6AU6	
V5	3rd. Video IF Amplifier	6AU6	
V6	Video Output-Sync Sep.	6AU8	Note 3
V7	AGC Keying-Sync Phase Inv.	6AU8	Note 3
V8	Sound IF Amplifier	6AU6	
V9	Ratio Det.-AF Amplifier	6T8	

ITEM No.	USE	TYPE	NOTES
V10	Audio Output	6AQ5	
V11	Vert. Mult.	12AU7A	
V12	Vert. Output	6V6GT	
V13	Horiz. AFC	6AL5	
V14	Horiz. Mult.	12AU7A	
V15	Horiz. Output	6CU6	Note 4
V16	Damper	6AX4GT	
V17	HV Rectifier	1B3GT	
V18	LV Rectifier	5U4GB	Note 5

Note 1. 6BC8 used in some versions.
Note 2. 6BR8 used in some versions.
Note 3. 6AW8 used in some versions.
Note 4. 6BQ6GA used in some versions.
Note 5. 5U4GA used in some versions.

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	Setchell-Carlson PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V19	21ATP4 ①	21ATP4 ①	21ATP4 ①	21ATP4 ②	① Aluminized
				17AVP4	② Silver screen "85"
	17AVP4A ①	17AVP4A ①	17AVP4A ①	17AVP4A ②	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Setchell-Carlson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲40	350		AFH3-29-85	B080	FP375.4	TMD-91	Q-012	R2247 *
B	■120	350			BR4035	TC68	TD-40-350	MT-4540	
C	▬40	350							
C2	5	150		PRS150V4	BR415	TC40	TD-4-150	FM-1504	TVA-1402
C3	100	50		PRS50V100	BRH501	TC3501	TD-100-50	MTH-5010	TVA-1310

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	Setchell-Carlson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C4	120				DD-121		811-121			
C5	5			NP0-DI5	TCZ-4R7	Z011	NP0A-050	ZT-555	5TCCB-V47	
C6	6.8			NP0-DI6.8	TCZ-6R8	Z013	NP0A-6R8	ZT-5568	5TCCB-V68	
C7	6.8			NP0-DI6.8	TCZ-6R8	Z013	NP0A-6R8	ZT-5568	5TCCB-V68	
C8	3			NP0-DI3	TCZ-3R3	Z007	NP0A-030	ZT-553	5TCCB-V33	
C9	2-10				829-10					
C10	2.2			NP0-SI2.2	TCZ-2R2	Z006	NP0A-2R2		5TCCB-V22	
C11	800									
C12	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C13	.5-3				829-3		3115-01-0R5	CT565A		
C14	800									
C15	800									
C16	60									
C17	.5-3				829-3		3115-01-0R5	CT565A		
C18	1			NP0-SI1	TCZ-1	TZ03	NP0A-010		5TCCB-V1	
C19	10									
C20	10									
C21	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C22	800									
C23	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C24	470			BPD-00047	DD-471	K060	811-471	UC-5347	5GA-T47	
C25	10000			BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	Note 1
C26	43	500		1469-000043	TCZ-43	TZ21	NP0L-470			
C27	.47	200		P288N-47		CUB2P47		PT4047	2TM-P47	
C28	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C29	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C30	.82									
C31	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C32	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C33	.82									
C34	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C35	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C36	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C37	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C38	.82									
C39	4.7			NP0-SI4.7	TCZ-4R7	TZ07	NP0A-4R7	ZT-5547	5TCCB-V47	
C40	270	500		SI270	D6-271	5W5T27	811-271	UC-5327	1FM-327	
C41	.1	400		P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C42	20	500		DI-00002	TCZ-20	5W5Q2	831-200	MCL-420	1FM-42	
C43	20	500		DI-00002	TCZ-20	5W5Q2	831-200	MCL-420	1FM-42	
C44	10000			BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C45	10000			BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C46	10000			BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C47	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C48	.0047	400		BPD-0047	D6-472	CUB6D47	GP2-333-472	CUB6D47	6TM-D47	
C49	.0047	400		BPD-0047	D6-472	CUB6D47	GP2-333-472	CUB6D47	6TM-D47	
C50	.0047	400		BPD-0047	D6-472	CUB6D47	GP2-333-472	CUB6D47	6TM-D47	Note 5
C51	10000			BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C52	2700			DI-0027	D6-272	K075	811-0027	UC-5227	5GA-D27	
C53	2700			DI-0027	D6-272	K075	811-0027	UC-5227	5GA-D27	
C54	.22	400		P488N-22		CUB4P22		PT4022	4TM-P22	
C55	.0047	400		BPD-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C56	.0047	400		BPD-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C57	.01	400		BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C58	.0047	400		BPD-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C59	.22	400		P488N-22		CUB4P22		PT4022	4TM-P22	
C60	.047	400		BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C61	.1	400		P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C62	910	500		1464-00091		1R5T91	811-911		MS-391	
C63	910	500		1464-00091		1R5T91	811-911		MS-391	
C64	.01	400		BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C65	680	500		BPD-00068	D6-681	1W5T68	811-681	UC-5368	5GA-T68	
C66	2700			DI-0027	D6-272	K075	811-0027	UC-5227	5GA-D27	Note 2
C67	2700			DI-0027	D6-272	K075	811-0027	UC-5227	5GA-D27	
C68	.047	400		BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C69	270	500		NP0-SI270	TCZ-270	5W5T27	NP0-335-271		MS-327	
C70	680	500		1464-00068	D6-681	1R5T68	811-681		MS-368	
C71	270	500		NP0-SI270	D6-271	5R5T27	811-271			
C72	2700			DI-0027	D6-272	K075	811-0027	UC-5227	5GA-T27	
C73	.1	400		P488N-1	DF-104	CUB4P1		PT401	4TM-P1	Note 3
C74	.1	400		P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C75	.047	400		BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C76	75	2000			DD30-750				20GA-Q75	Note 4

PARTS LIST AN

CAPAC

ITEM No.	RATING		Setchell-Carlson PART No.	AEROVOX PART No.	CENTRALA PART No.
	CAP.	VOLT			
C77	10000			BPD-01	DD-103
C78	1000			BPD-001	DD-102

Note 1. Not used in some versions.
Note 2. 17" Models use 4700MMF unit in this application.
Note 3. Some versions may use .22MFD unit in this applicatio
Note 4. Some versions may use 100MMF unit in this applicatio
Note 5. Not used in Chassis C100.

CONT

ITEM No.	RATING		REPLACEMENT		
	RESIST-ANCE	WATTS	Setchell-Carlson PART No.	CENTRALAB PART No.	CLAROST PART N
R1A	500K	½	808	AB-60	A47-500K
B	Shaft		Not Req.	AK-3	FS-3
C	Switch		Not Req.	KB-1	SWE-12
R2A	500K	½	804	AB-60	A47-500K
B	Shaft		Not Req.	AK-1	FKS-1/4
R3A	500Ω	½	809	B-4	A47-500-
B	Shaft		Not Req.	Not Req.	FS-3
R4A	2Meg	½	803	BX-75	A47-2Meg
B	Shaft		Not Req.	Not Req.	FKS-1/4
R5A	2000Ω	½	801	AB-705	
B	Shaft		Not Req.	AK-1	
R6A	2Meg	½	803A	BX-75	A47-2Meg
B	Shaft		Not Req.	Not Req.	FKS-1/4
R7A	2Meg	½	803	BX-75	A47-2Meg
B	Shaft		Not Req.	Not Req.	FKS-1/4
R8A	100K	½	802	BX-40	A47-100K
B	Shaft		Not Req.	Not Req.	FKS-1/4

Note 1. Not used in Chassis C100.

RESIST

All wattages 1/2 watt, or less,

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Setchell-Carlson PART No.	IRC PART No.	
R9	680K			BTS-680K	
R10	4700Ω			BTS-4700	
R11	820K			BTS-820K	
R12	470K			BTS-470K	
R13	220K			BTS-220K	
R14	8200Ω			BTS-8200	
R15	10K				
R16	5600Ω			BTS-5600	
R17	47K			BTS-47K	
R18	15K			BTS-15K	
R19	18K	2		BTB-18K	
R20	470Ω			BTS-470	
R21	1Meg			BTS-1Meg	
R22	8200Ω			BTS-8200	Note 1
R23	4700Ω				
R24	150Ω			BTS-150	
R25	470Ω			BTS-470	
R26	220K			BTS-220K	
R27	4700Ω				
R28	2200Ω			BTS-2200	
R29	150Ω			BTS-150	
R30	150Ω			BTS-150	
R31	4700Ω				
R32	47K			BTS-47K	
R33	4700Ω			BTS-4700	
R34	4.7Meg			BTS-4.7Meg	
R35	220K			BTS-220K	
R36	4700Ω	2		BTB-4700	
R37	220K			BTS-220K	
R38	4.7Meg			BTS-4.7Meg	
R39	4700Ω			BTS-4700	
R40	22K			BTS-22K	
R41	100K			BTS-100K	
R42	150Ω			BTS-150	
R43	47K			BTS-47K	
R44	150Ω			BTS-150	
R45	150Ω			BTS-150	
R46	47K			BTS-47K	
R47	15K			BTS-15K	
R48	4.7Meg			BTS-4.7Meg	

Note 1. Some versions use a 220
Note 2. Some versions use a 100
Note 3. Not used in some versio
Note 4. Some versions use a n 1

TRANSFORME

ITEM No.	RATING				Setchell-Carlso PART No.
	PRI.	SEC. 1	SEC. 2	SEC. 3	
T1	117VAC	550VCT	5V	6.3V	
	③ 1.4A	④ .200A	③ 3A	③ 8.6A	

① Tape 6.3V ③ 1.25A winding.
② Tape 6.3V ④ 1.2A winding.
③ Parallel and phase 6.3V ③ 6A winding.
④ Tape high voltage winding. Tape 5V ③ 3A winding parall
⑤ Drill new mounting holes.

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6BQ7A	Note 1
V2	Mixer-Oscillator	6A7S	Note 2
V3	1st. Video IF Amplifier	6BA6	
V4	2nd. Video IF Amplifier	6AU6	
V5	3rd. Video IF Amplifier	6AU6	
V6	Video Output-Sync Sep.	6AU8	Note 3
V7	AGC Keying-Sync Phase Inv.	6AU6	Note 3
V8	Sound IF Amplifier	6AU6	
V9	Ratio Det.-AF Amplifier	6T8	Note 5

ITEM No.	USE	TYPE	NOTES
V10	Audio Output	6AQ5	
V11	Vert. Mult.	12AU7A	
V12	Vert. Output	6V6GT	
V13	Horiz. AFC	6AL5	
V14	Horiz. Mult.	12AU7A	
V15	Horiz. Output	6CU5	Note 4
V16	Damper	5AX4GT	
V17	HV Rectifier	1B3GT	
V18	LV Rectifier	5U4GB	Note 5

Note 1. 6BC5 used in some versions.
Note 2. 6BA8 used in some versions.
Note 3. 6AW8 used in some versions.
Note 4. 6BQ6GA used in some versions.
Note 5. 5U4GA used in some versions.

PICTURE TUBE

ITEM No.	REPLACEMENT DATA: Setchell-Carlson PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	NOTES
V19	21ATP4 ①	21ATP4 ①	21ATP4 ①	21ATP4 ②	① Aluminized ② Silver screen "86"
	17AVP4A ①	17AVP4A ①	17AVP4A ①	17AVP4A ②	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Setchell-Carlson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	4-40	350		AFH3-29-85	BG60	FP375-4	TMD-51	Q-912	R2347 *
B	20-20	350			BR4035	TC66	TD-40-350	MT-4540	
C	40-40	350							
C2	5	150		PRS150V4	BR415	TC40	TD-4-150	FM-1504	TVA-1403
C3	100	50		PRS50V100	BR3501	TC3501	TD-100-50	MTH-5010	TVA-1310

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Setchell-Carlson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C4	120				DD-121		81-121			
C5	5			NPO-D15	TCZ-4R7	Z2U1	NPOA-050	Z7-555	5TCCB-V47	
C6	6.8			NPO-D6.8	TCZ-6R8	Z2U3	NPOA-6R8	Z7-5568	5TCCB-V68	
C7	6.8			NPO-D6.8	TCZ-6R8	Z3U3	NPOA-6R8	Z7-5568	5TCCB-V68	
C8	3			NPO-D3	TCZ-3R3	Z0U7	NPOA-030	Z7-553	5TCCB-V33	
C9	2-10				529-10					
C10	2.2			NPO-S2.2	TCZ-2R2	Z0U6	NPOA-2R2		5TCCB-V22	
C11	500									
C12	1000			BPD-001	DD-102	K069	901-001	DC-531	5HK-D1	
C13	5-8				529-3		31U5-01-GR5	CT65A		
C14	500									
C15	500									
C16	60									
C17	5-8				529-3		8U5-01-GR5	CT65A	5TCCB-V	
C18	1			NPO-S1	TCZ-1	TZ03	NPOA-010			
C19	10									
C20	10									
C21	1000			BPD-001	BD-102	K069	801-001	DC-531	5HK-D1	
C22	500									
C23	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C24	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C25	10000			BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	Note 1
C26	40	500		1488-000043	TCZ-43	TZ21	NPOL-470			
C27	.47	300		P282N-47		CU3BP4T		P7W047	2TM-P47	
C28	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C29	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C30	.82									
C31	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C32	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C33	.82									
C34	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C35	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C36	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C37	1000			BPD-001	DD-102	K069	801-001	DC-531	5HK-D1	
C38	.82									
C39	4.7			NP0-S4.7	TCZ-4R7	TZ07	NP0A-4R7	Z7-5547	5TCCB-V47	
C40	270	500			D6-271	SW5T27	811-271	UC-5327	1FM-S27	
C41	.1	400		P488N-1		DF-104	CU84P1		P7W1	4TM-P1
C42	20	500		DI-00002		TCZ-30	SW5Q2	831-300	MCL-430	1FM-42
C43	20	500		DI-00002		TCZ-30	SW5Q2	831-300	MCL-430	1FM-42
C44	10000			BPD-01		DD-103	K082	811-01	DC-511	5HK-S1
C45	10000			BPD-01		DD-103	K082	811-01	DC-511	5HK-S1
C46	10000			BPD-01		DD-103	K082	811-01	DC-511	5HK-S1
C47	1000			BPD-001		DD-102	K069	801-001	DC-531	5HK-D1
C48	.0047	400		BPD-0047		D6-473	CUBD4T	GP3-333-47Z	CUBD4T	5TM-D47
C49	.0047	400		BPD-0047		D6-473	CUBD4T	GP3-333-47Z	CUBD4T	5TM-D47
C50	.0047	400		BPD-0047		D6-473	CUBD4T	GP3-333-47Z	CUBD4T	5TM-D47
C51	10000			BPD-01		DD-103	K082	811-01	DC-511	5HK-S1
C52	2700			DI-0027		D6-272	KU75	811-0027	UC-5327	5GA-D27
C53	2700			DI-0027		D6-272	KU75	811-0027	UC-5327	5GA-D27
C54	33	400		P488N-33			CU34P2Z		P7W033	4TM-P33
C55	.0047	600		BPD-0047		D6-473	CUBD4T	GP3-333-47Z	PT6347	5TM-D47
C56	.0047	400		BPD-0047		D6-473	CUBD4T	GP3-333-47Z	PT6347	5TM-D47
C57	.01	600		BPD-01		DD-103	CU84S1	GP3-333-103	PT611	4TM-S1
C58	.0047	400		BPD-0047		D6-473	CUBD4T	GP3-333-47Z	PT6347	5TM-D47
C59	.33	600		P488N-33			CU34P3Z		P7W033	4TM-P33
C60	.047	600		BPD-05		DF-503	CUB4S7		PT6347	4TM-S47
C61	.1	600		P488N-1		DF-104	CU84P1		P7W01	4TM-P1
C62	510	500		1484-00091			1R5T2Z1	811-511		MS-391
C63	510	500		1484-00091			1R5T2Z1	811-511		MS-391
C64	.01	600		BPD-01		D6-103	CU84S1	GP3-333-103	PT611	4TM-S1
C65	680	500		BPD-00068		D6-681	1R5T2S8	811-681	UC-5368	5GA-T68
C66	2700			DI-0027		D6-272	KU75	811-0027	UC-5327	5GA-D27
C67	2700			DI-0027		D6-272	KU75	811-0027	UC-5327	5GA-D27
C68	.047	600		BPD-05		DF-503	CUB4S7		PT6347	4TM-S47
C69	270	500		NP0-S270		TCZ-270	5W5T27	811-271		MS-327
C70	680	500		1484-00068		D6-681	1R5T2S8	811-681		MS-368
C71	270	500		NP0-S270		D6-271	5R5T27	811-271		
C72	2700			DI-0027		D6-272	KU75	811-0027	UC-5327	5GA-T27
C73	.1	400		P488N-1		DF-104	CU84P1		PT601	4TM-P1
C74	.1	400		P488N-1		DF-104	CU84P1		PT601	4TM-P1
C75	.047	600		BPD-05		DF-503	CUB4S7		PT6347	4TM-S47
C76	75	2000				DD30-750				30GA-Q75

Note 4

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Setchell-Carlson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C77	10000			BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C78	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	Note 1

Note 1. Not used in some versions.
Note 2. 17" Models use 4700MMF unit in this application.
Note 3. Some versions may use .22MFD unit in this application.
Note 4. Some versions may use 100MMF unit in this application.
Note 5. Not used in Chassis C100.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Setchell-Carlson PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1 Meg	½		60S	A5-90	A47-500K-Z	Q13-153	U48	Volume
B	Shaft			Not Req.	AK-3	FS-3	Not Req.	Not Req.	Attach to R1A.
C	Switch			Not Req.	KB-1	SWE-13	76-1	U8-26	Attach to R1A.
R2A	500K	½		80S	AB-90	A47-500K-Z	Q13-152	U48	Tone-Note 1
B	Shaft			Not Req.	AK-1	FKS-1/4	Not Req.	Not Req.	Attach to R2A.
R3A	500Ω	½		80S	B-4	A47-500-S	Q11-103	U3	Contrast
B	Shaft			Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R3A.
R4A	2 Meg	½		80S	BX-75	A47-2Meg-S	Q11-139	TA35L	Vert. Hold
B	Shaft			Not Req.	Not Req.	FKS-1/4	SQ	Not Req.	Attach to R4A.
R5A	2000Ω	½		80S	AB-705		Q17-111	U7	Height Top
B	Shaft			Not Req.	AK-1		SQ	Not Req.	Attach to R5A.
R6A	2Meg	½		80A	BX-75	A47-2Meg-S	Q11-139	TA35L	Height Bottom
B	Shaft			Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R6A.
R7A	1Meg	½		80S	BX-75	A47-1Meg-S	Q11-139	TA35L	Horiz. Hold
B	Shaft			Not Req.	Not Req.	FKS-1/4	SQ	Not Req.	Attach to R7A.
R8A	100K	½		80S	BX-40	A47-100K-S	Q11-138	TA15L	
B	Shaft			Not Req.	Not Req.	FKS-1/4	SQ	Not Req.	

Note 1. Not used in Chassis C100.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Setchell-Carlson PART No.	IRC PART No.	NOTES
R9	680K			BTS-680K	
R10	470Ω			BTS-470	
R11	820K			BTS-820K	
R12	470K			BTS-470K	
R13	220K			BTS-220K	
R14	8200Ω			BTS-8200	
R15	10K				
R16	5600Ω			BTS-5600	
R17	47K			BTS-47K	
R18	15K			BTS-15K	
R19	18K	2		BTS-18K	
R20	470Ω			BTS-470	
R21	1Meg			BTS-1Meg	
R22	9200Ω			[illegible]	Note 1
R23	4700Ω				
R24	150Ω			BTS-150	
R25	470Ω			BTS-470	
R26	220K			BTS-220K	
R27	4700Ω				
R28	2200Ω			BTS-2200	
R29	150Ω			BTS-150	
R30	150Ω			BTS-150	
R31	4700Ω				
R32	47K			BTS-47K	
R33	4700Ω			BTS-4700	
R34	4.7Meg			BTS-4.7Meg	
R35	220K			BTS-220K	
R36	4700Ω	2		BTS-4700	
R37	220K			BTS-220K	
R38	4.7Meg			BTS-4.7Meg	
R39	4700Ω			BTS-4700	
R40	22K			BTS-22K	
R41	100K			BTS-100K	
R42	150Ω			BTS-150	
R43	47K			BTS-47K	
R44	150Ω			BTS-150	
R45	150Ω			BTS-150	
R46	47K			BTS-47K	
R47	15K			BTS-15K	
R48	4.7Meg			BTS-4.7Meg	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Setchell-Carlson PART No.	IRC PART No.	NOTES
R49	470K			BTS-470K	
R50	1Meg			BTS-1Meg	
R51	2700	1		BTA-270	
R52	2000Ω	5		PW7-2000	
R53	22K			BTS-22K	
R54	4.7Meg			BTS-4.7Meg	
R55	220K			BTS-220K	
R56	33K			BTS-33K	
R57	6800Ω			BTS-6800	
R58	22K			BTS-22K	
R59	5600Ω			BTS-5600	
R60	10K	2		BTS-10K	
R61	47K			BTS-47K	Note 2
R62	220K			BTS-220K	
R63	4700Ω			BTS-4700	
R64	470K			BTS-470K	
R65	1Meg			BTS-1Meg	
R66	470K			BTS-470K	Note 3
R67	82000Ω			BTS-8200	
R68	4.7Meg			BTS-4.7Meg	
R69	47K			BTS-47K	
R70	4700Ω			BTS-470	
R71	560Ω				
R72	560Ω				
R73	27K	2			Note 4
R74	220K				
R75	220K				
R76	2.2Meg				
R77	4.7Meg				
R78	27K	2			
R79	130K				
R80	100K				
R81	820Ω				
R82	22K				
R83	82000Ω				
R84	2.2Meg				
R85	82Ω				
R86	56K	10			
R87	2200Ω				Note 3
R88	2.2Ω			BW1-2.2	Note 3

Note 1. Some versions use a 22000 1/2W resistor in this application.
Note 2. Some versions use a 100K 1W resistor in this application.
Note 3. Not used in some versions.
Note 4. Some versions use an 18K 2W resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Setchell-Carlson PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC	550VCT	5V	6.3V	P9733 ⑤	P-8830 ⑤ 1 3	P-8334 ④	S6R33 ⑤	R-61BC ⑤ 2	
		5.4A	2.20A	0.6A						

① Tape 6.3V ③ 1.25A winding.
② Tape 6.3V ① 1.2A winding.
③ Parallel and phase 6.3V ② 6A winding.
④ Tape high voltage winding. Tape 5V ② 3A winding parallel and phase 6.3V ② 5A winding.
⑤ Drill new mounting holes.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA: Setchell-Carlson PART No.	Halldorson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No
T2	Horiz. Output Trans.	PF155		HVO-54* 1		X129 * 1	A-8255 * 1	F1LY-78 * 1	D-49 * 1
T3	Vert. Output Trans.	615	Z1800 ②						
T4A	Yoke(90°) Horiz.(30MH)	484	DF907 ③ ④	MDF-22 ③ ④	25SD1 ③ ④	Y90F19/43 ③ ④	DY-16A ③ ④	Y-16 ③ ④	Y-41-1 ③ ④
B	Vert. (38MH)								

① Use original mounting brackets.
② Connect terminal #2 to terminal #3. Connect terminal #4 to terminal #5. Then connect terminal #1 to plate (Pin #3 of V12); terminals #2 and #3 to screen (Pin #4 of V12). Connect terminals #4 and #6 to yoke socket Pin #2; terminal #13 to yoke socket Pin #3.
③ Use original rear cover and centering device.
④ To mount same as original, with core clamp screw on top, connect horizontal damping network across terminals #1 and #2, and connect terminal #1 to horizontal output transformer terminal #3. To mount with core clamp screw on bottom, connect horizontal damping network across terminals #3 and #7, and connect terminal #3 to horizontal output transformer terminal #3.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
5		5	5	5	5	5	5
4		4	4	4	4	4	6
3		4	4	4	4	4	7
1		2	2	2	2	2	3
7		7	7	7	7	7	3
8		8	8	8	8	8	4

TRANSFORMER (AUDIO OUTPUT)

ITEM No	IMPEDANCE: PRI.	IMPEDANCE: SEC.	REPLACEMENT DATA: Setchell-Carlson PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No	NOTES
T5	6kΩ	3-4Ω		Z1064	A-3821	A-3471	24S81	S-51X	

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: Setchell-Carlson PART No.	QUAM PART No.	RCA TYPE No.	NOTES
SP1	8"	PM	3-4Ω		8A21	20S52	

COILS (RF-IF)

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: Setchell-Carlson PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	1st Video IF	.1Ω						Includes 44.25MC Trap
L2	2nd Video IF	.1Ω	.1Ω					
L3	3rd Video IF	.1Ω	.1Ω					
L4	4th Video IF	.1Ω	.1Ω					
L5	Series Peaking Coil	1Ω						22S Microbeauties; Wound on 22K resistor
L6	Series Peaking Coil	1.6Ω			19-4400 *		6136 *	43G Microbeauties; Wound on 22K resistor
L7	Shunt Peaking Coil	1.6Ω			19-4400		6136	40G Microbeauties
L8	Sound IF	7.5Ω						
L9	Ratio Det.	7Ω	1.80CT	C4503	17-3497 ■	TV-115 ■	6205 ■	Tertiary Winding, 7Ω

* Parallel with 22K resistor.
■ Cut out chassis hole and use adaptor plate.

FILTER CHOKE

ITEM No	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (D. CURRENT 1000 ᵐA)	REPLACEMENT DATA: Setchell-Carlson PART No	Halldorson PART No	Merit PART No.	Stancor PART No	Thordarson PART No.	Triad PART No.
L10	200A	52Ω	2.1HY		C-8030 ①	C-8874	C-2325 1	26C43	C-31X

1 Drill one new mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: Setchell-Carlson PART No: FUSE	Setchell-Carlson PART No: HOLDER	LITTELFUSE PART No.: FUSE	LITTELFUSE PART No.: HOLDER	BUSS PART No.: FUSE	BUSS PART No.: HOLDER
M1	C	2½A 250V			31202.5 (C 2½A)	346005	C 2½	HC 1 3/4-2½

CRYSTAL DIODES

ITEM No	ORIG TYPE	REPLACEMENT DATA: Setchell-Carlson PART No	SYLVANIA PART No.	NOTES
M2	1N60			Video Det. (Pigtail)

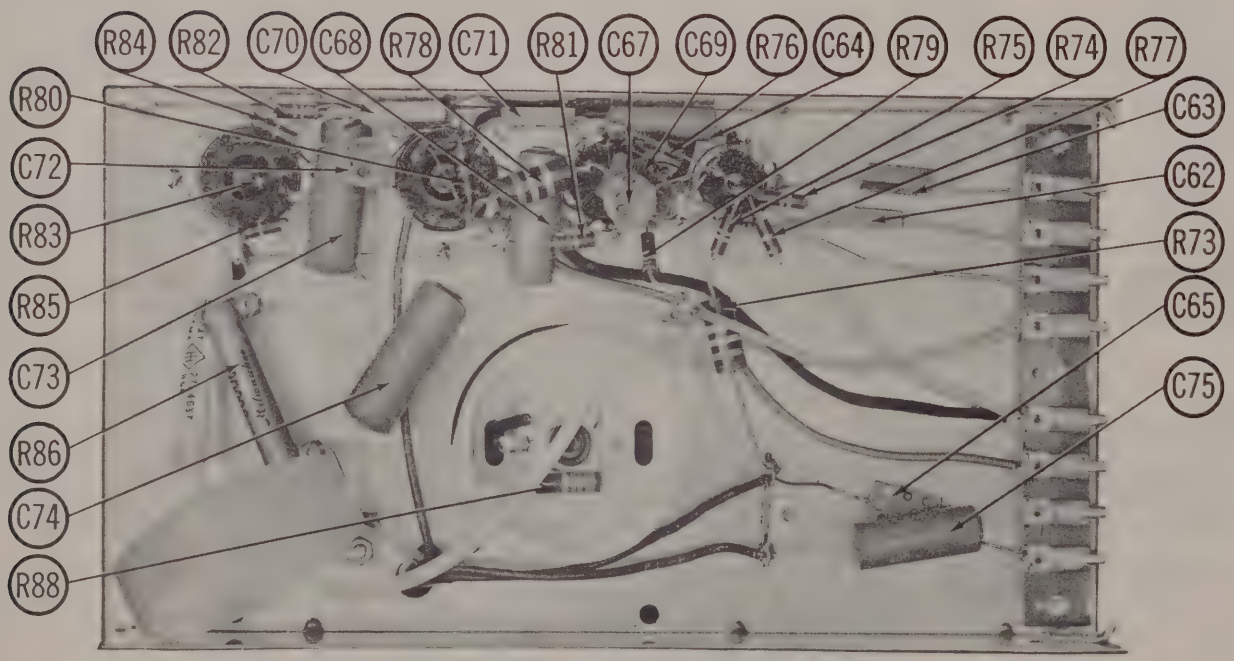
MISCELLANEOUS

ITEM No.	PART NAME	Setchell-Carlson PART No.	NOTES
M3	Dial Light		#44
M4	Tuner	TD-006	VHF
M5	Centering Device		Part of Deflection Yoke (T4) Rear Cover
M6	Width Control		
M7	Ion Trap		

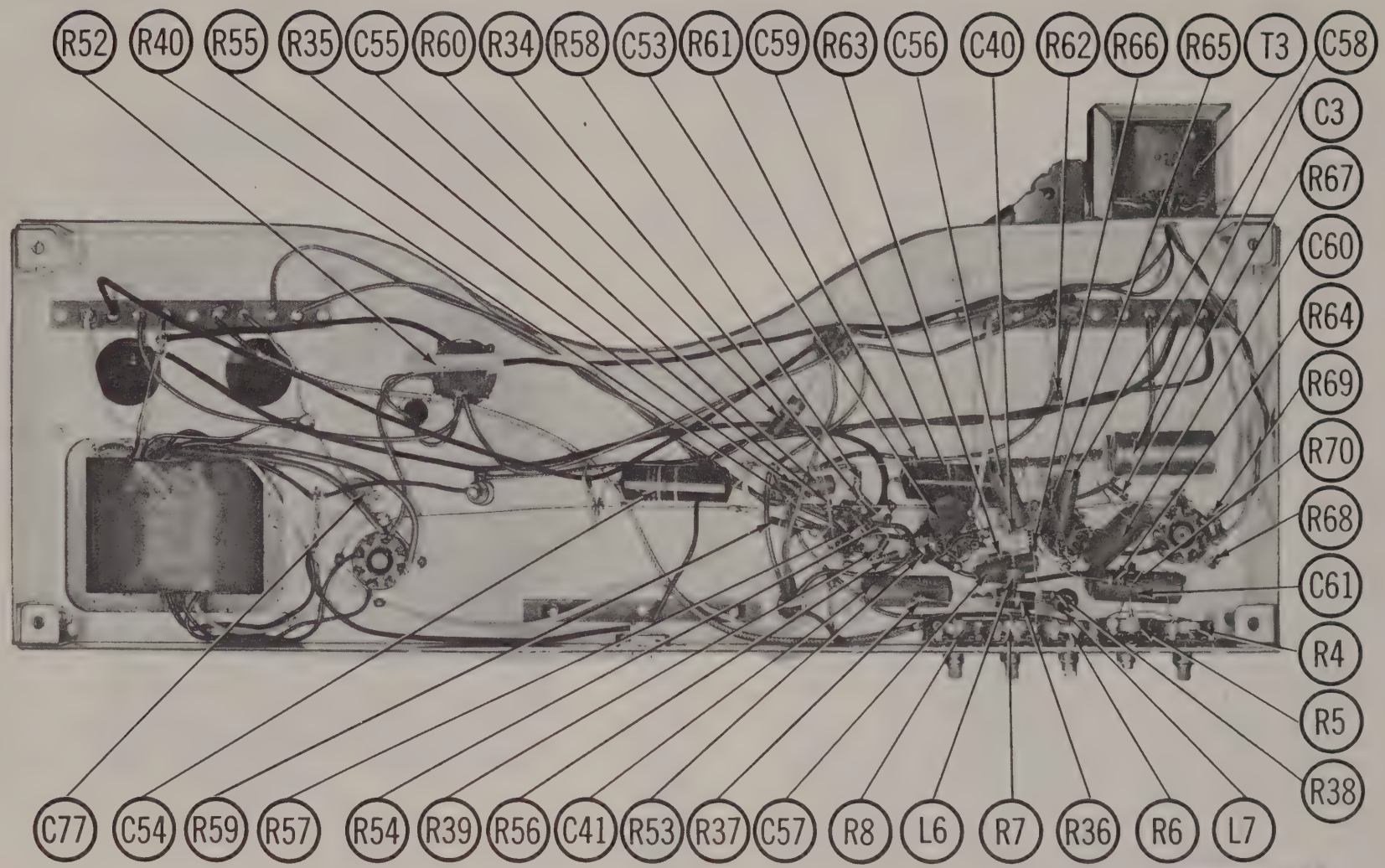
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BQ7A	INF	1Meg	0Ω	0Ω	.1Ω	† 800Ω	300K	INF	0Ω
V2	6AT8	10K	† 24K	0Ω	0Ω	.1Ω	† 33K	† 65K	0Ω	220K
V3	6BA6	220K	0Ω	0Ω	.1Ω	# 150Ω	# 150Ω	470Ω		
V4	6AU6	INF	INF	0Ω	.1Ω	† 2200Ω	† 2200Ω	INF		
V5	6AU6	.1Ω	150Ω	0Ω	.1Ω	† 200Ω	† 47K	150Ω		
V6	6AU8	0Ω	2.5Meg	† 150K	.1Ω	0Ω	¶ 350Ω	4700Ω	† 15K	† 4700Ω
V7	6AU8	5600Ω	† 150K	† 17K	0Ω	.1Ω	† 10K	† 15K	† 22K	400K
V8	6AU6	100K	150Ω	0Ω	.1Ω	† 360Ω	† 47K	150Ω		
V9	6T8	500K	15K	500K	0Ω	.1Ω	NC	0Ω	4.7Meg	† 470K
V10	6AQ5	1Meg	270Ω	.1Ω	0Ω	† 2400Ω	† 2000Ω	1Meg		
V11	12AU7A	†¶ 1.5Meg	¶ 1Meg	4700Ω	0Ω	0Ω	† 220K	0Ω	4700Ω	.1Ω
V12	6V6GT	TP	0Ω	† 600Ω	† 260Ω	4.7Meg	NC	.1Ω	¶ 800Ω	
V13	6AL5	27K	27K	0Ω	.1Ω	5Meg	0Ω	5Meg		
V14	12AU7A	† 27K	7Meg	820Ω	0Ω	0Ω	† 100K	¶ 160K	820Ω	.1Ω
V15	6CU6	TP	.1Ω	TP	* 50K	2.2Meg	NC	0Ω	0Ω	TOP CAP * 12Ω
V16	6AX4GT	TP	NC	INF	TP	† 62Ω	NC	0Ω	.1Ω	
V17	1B3GT	PINS 1-8 HAVE INF RESISTANCE								TOP CAP * 510Ω
V18	5U4GB	NC	100K	NC	36Ω	NC	39Ω	NC	100K	
V19	21ATP4	0Ω	0Ω	PIN 6 † 62Ω	PIN 10 † 65Ω	PIN 11 †¶ 500K	PIN 12 .1Ω			

† MEASURED FROM PIN 8 OF V18.
# MEASURED FROM PIN 7 OF V4.
¶ THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
* MEASURED FROM PIN 3 OF V16.
TP-TIE POINT.
NC-NO CONNECTION.



SUB-CHASSIS OF UNIT-BOTTOM VIEW



MAIN CHASSIS BOTTOM VIEW

SETCHELL-CARLSON

MODELS P61 (Ch. C100-Late), 611 (Ch. C200)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped away from the chassis.

VIDEO IF ALIGNMENT

Remove the mixer oscillator tube from its socket. This will disable the local oscillator and reduce the possiblity of erroneous indications.
Connect the negative lead of a 9 volt battery to point (F). Positive lead to chassis.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.01MFD	High side to point (B). Low side to chassis.	46.5MC (10MC Swp)	48.75MC 44.25MC	Any	Vert. Amp. thru 10KΩ to point (A). Low side to chassis.	A1, A2	Adjust for response curve similar to Fig.1. Adjust to place 48.75MC marker at 50% and 44.25MC marker in sound trap as in Fig. 1.
2.	"	High side to point (C). Low side to chassis.	"	"	"	"	A3, A4	"
3.	"	High side to point (D). Low side to chassis.	"	"	"	"	A5, A6	"
4.	"	High side to point (E). Low side to chassis.	"	"	"	"	A7, A8, A9	Adjust for response similar to Fig. 1. Repeat steps 1 thru 4 if necessary to obtain proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point (G) to chassis. The junction of these two resistors is alignment point (H) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	Direct	High side to point (A). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (G). Common to chassis.	A10, A11	Adjust for maximum deflection.
6.	"	"	"	"	DC probe to point (I). Common to point (H).	A12	Adjust for zero deflection. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	Direct	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (G). Low side to chassis.	A10, A11	Disconnect stabilizing capacitor C2. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
6.	"	"	"	"	"	Vert. Amp. to point (I). Low side to chassis.	A12	Reconnect C2. Adjust so that 4.5MC marker occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A11 for maximum amplitude and straightness of crossover lines.

TUNER ALIGNMENT

The tuner portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

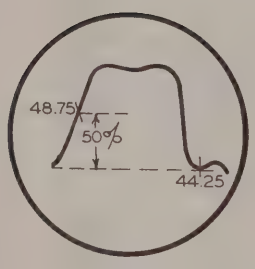


FIG.1

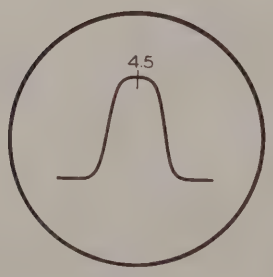


FIG.2

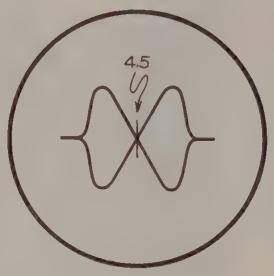
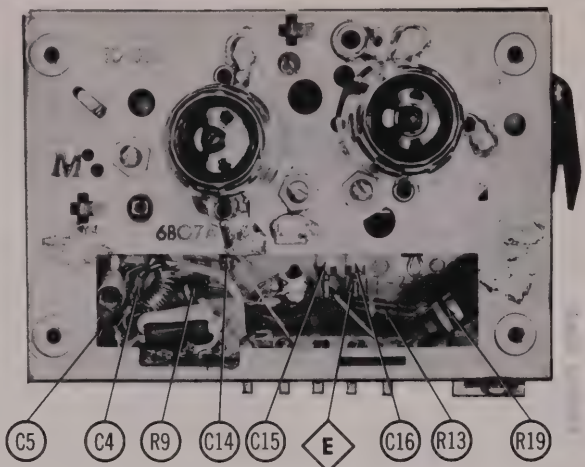
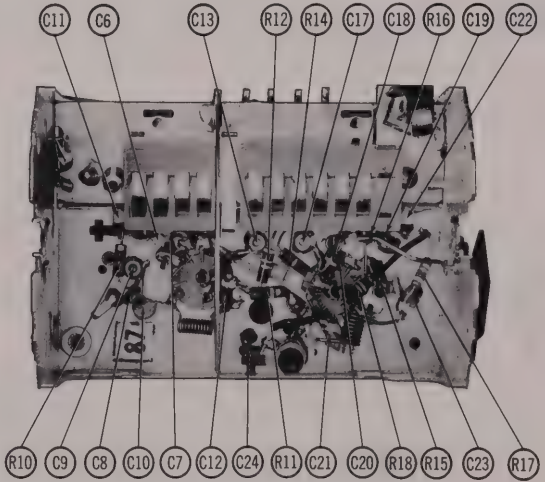


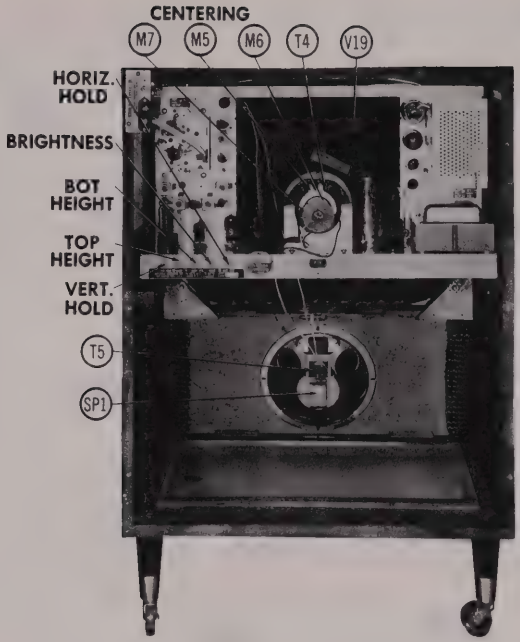
FIG. 3



RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station. Adjust the horizontal hold control to synchronize the picture horizontally. If the control has to be turned to either extreme to sync in the picture, or if slow warm-up cause the horizontal frequency to drift, replace V14 (12AU7A).

RETMA MEMBER

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SILVERTONE MODEL 6122 (Ch. 528.39402)

TRADE NAME	Silvertone	MODELS	CHASSIS
		6175, 6177, 6185, 6187	528.38100, 528.38101, 528.38102, 528.42700, 528.42701, 528.42702
		6174, 6176, 6184, 6186	528.38500, 528.38501, 528.38502, 528.38503
		6133	528.38600, 528.38601, 528.38602, 528.42600, 528.42601, 528.42602
		6132	528.38700, 528.38701, 528.38702, 528.44100, 528.44200
		6122, 6124	528.39400, 528.39401, 528.39402, 528.44300, 528.44301
		6123	528.39500, 528.39501, 528.39502, 528.42800, 528.42802, 528.42802
SUPPLIER	Sears Roebuck & Co., 925 S. Homan Ave., Chicago, Illinois		
TYPE SET	Television Receiver		
TUBES	Seventeen		
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING 1.5 Amp. @ 117 Volts AC	
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

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SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187 (Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)

RETMA MEMBER

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 3 wood screws holding escutcheon plate located on channel selector, and fine tuning knobs. (It will not be necessary to remove channel selector and fine tuning knobs.

2. Remove 5 push-on type control knobs from side panel of cabinet.

3. Remove 5 wood screws. Remove rear cover.

4. Remove picture tube socket, yoke plug, HV lead and speaker leads.

5. Remove 4 hex nuts holding chassis to cabinet. Remove chassis.

6. Remove 2 speaker nuts. Remove speaker.

MODEL	CHASSIS
6122	528.39402

SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187 (Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

For touch-up adjustments of VHF tuner oscillator adjustments, it is necessary to remove the chassis from the cabinet. (See alignment instructions).

PICTURE TUBE SAFETY GLASS CLEANING

Remove 3 wood screws holding metal molding at the top edge of the safety glass. Remove molding and safety glass. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator, it is necessary to remove the rear cover and supply power to chassis. Adjustment is located on top of the chassis. Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug (L18) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L17) located on top of the chassis.

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

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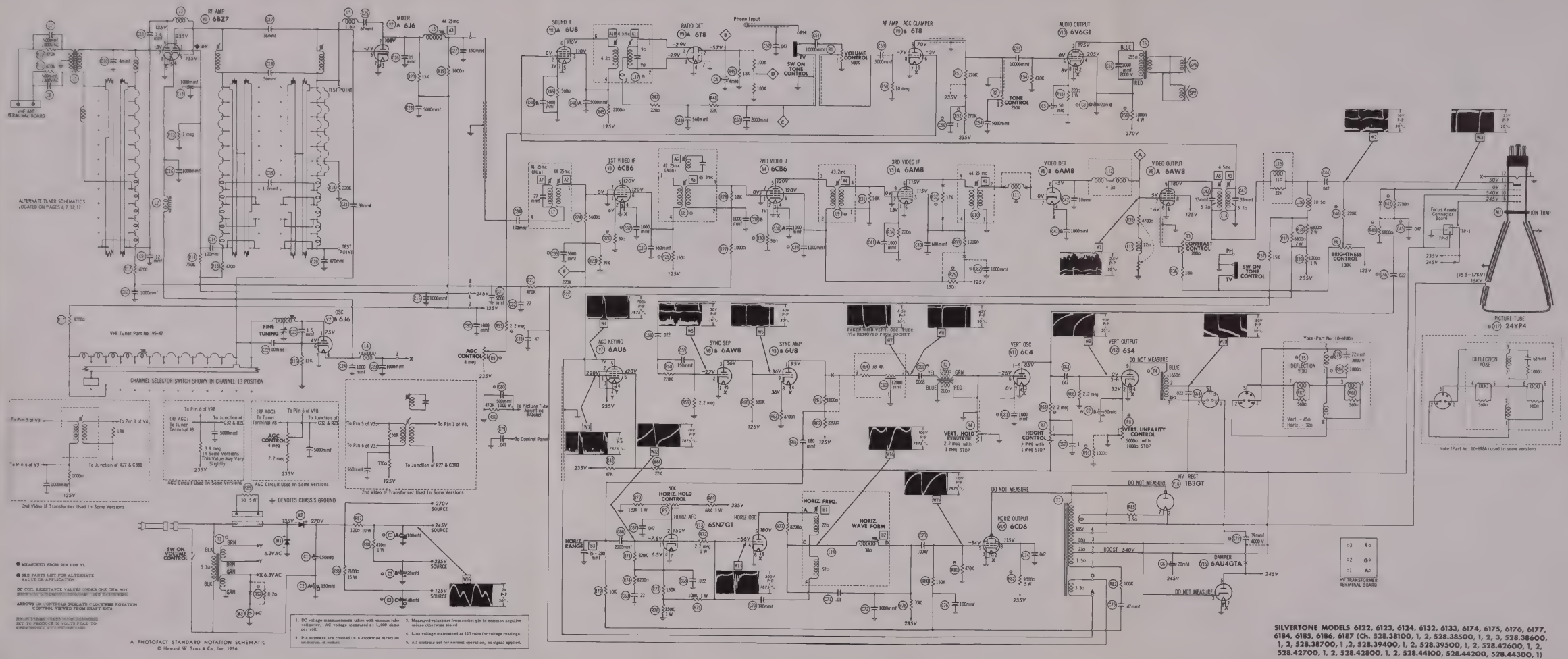
G430

DATE 9-56

SET 329 FOLDER 13


RF AMP V1 6BZ7
MIXER V2 A 6J6
OSC V2 B 6J6
SOUND IF V8 A 6U8
RATIO DET V9 A 6T8
AF AMP AGC CLAMPER V9 B 6T8
AUDIO OUTPUT V10 6V6GT
1ST VIDEO IF V3 6CB6
2ND VIDEO IF V4 6CB6
3RD VIDEO IF V5 A 6AM8
VIDEO DET V5 B 6AM8
VIDEO OUTPUT V6 A 6AW8
AGC KEYING V7 6AU6
SYNC SEP V6 B 6AW8
SYNC AMP V8 B 6U8
VERT OSC V11 6C4
VERT OUTPUT V12 6S4
HORIZ AFC
HORIZ OSC
65N7GT
HORIZ OUTPUT V14 6CD6
HV RECT V16 1B3GT
DAMPER 6AU4GTA
PICTURE TUBE V17 24YP4
VHF ANT TERMINAL BOARD
ALTERNATE TUNER SCHEMATICS LOCATED ON PAGES 4, 7, 12, 17
TEST POINT
VHF Tuner Part No. 95-47
FINE TUNING
AGC CONTROL 4 meg
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
Phono Input
VOLUME CONTROL 500K
SW ON TONE CONTROL
TONE CONTROL 250K
CONTRAST CONTROL 200K
BRIGHTNESS CONTROL 100K
HEIGHT CONTROL 5 meg with 1 meg STOP
VERT. HOLD CONTROL 2.2 meg with 1 meg STOP
VERT. LINEARITY CONTROL 5000Ω with 1000Ω STOP
HORIZ. HOLD CONTROL 40K
HORIZ. FREQ.
HORIZ. WAVE FORM
HORIZ. RANGE
BOOST 540V
DO NOT MEASURE
Yoke (Part No. 10-6980)
Yoke (Part No. 10-6980A) used in some versions
DEFLECTION YOKE
Focus Anode Connector Board
ION TRAP
HV TRANSFORMER TERMINAL BOARD
SW ON VOLUME CONTROL
2nd Video IF Transformer Used In Some Versions
AGC Circuit Used In Some Versions
2nd Video IF Transformer Used In Some Versions
To Picture Tube Mounting Bracket
To Control Panel
DENOTES CHASSIS GROUND
270V SOURCE
245V SOURCE
235V SOURCE
125V SOURCE
6.3VAC
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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◆ MEASURED FROM PIN 3 OF V1.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END).

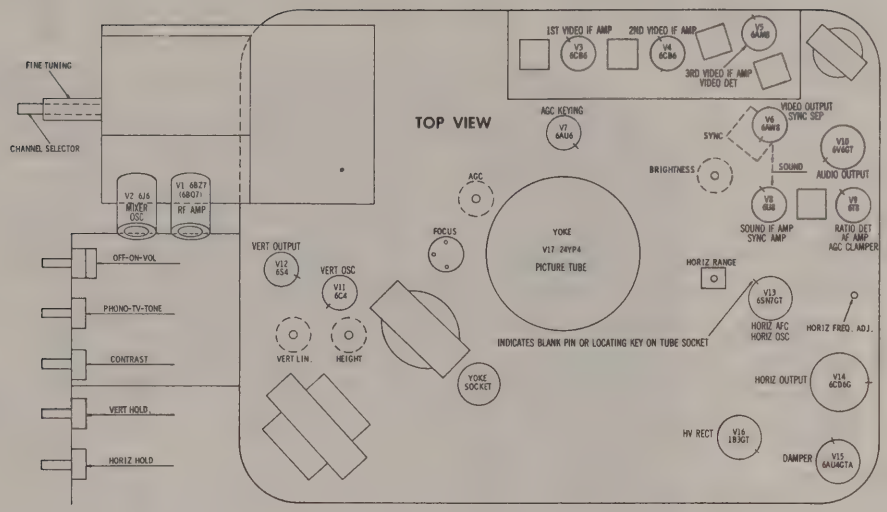
SET TO PRODUCE 50 VOLTS PEAK TO

1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as shown at socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, no signal applied.

SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187 (Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)

SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187 (Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

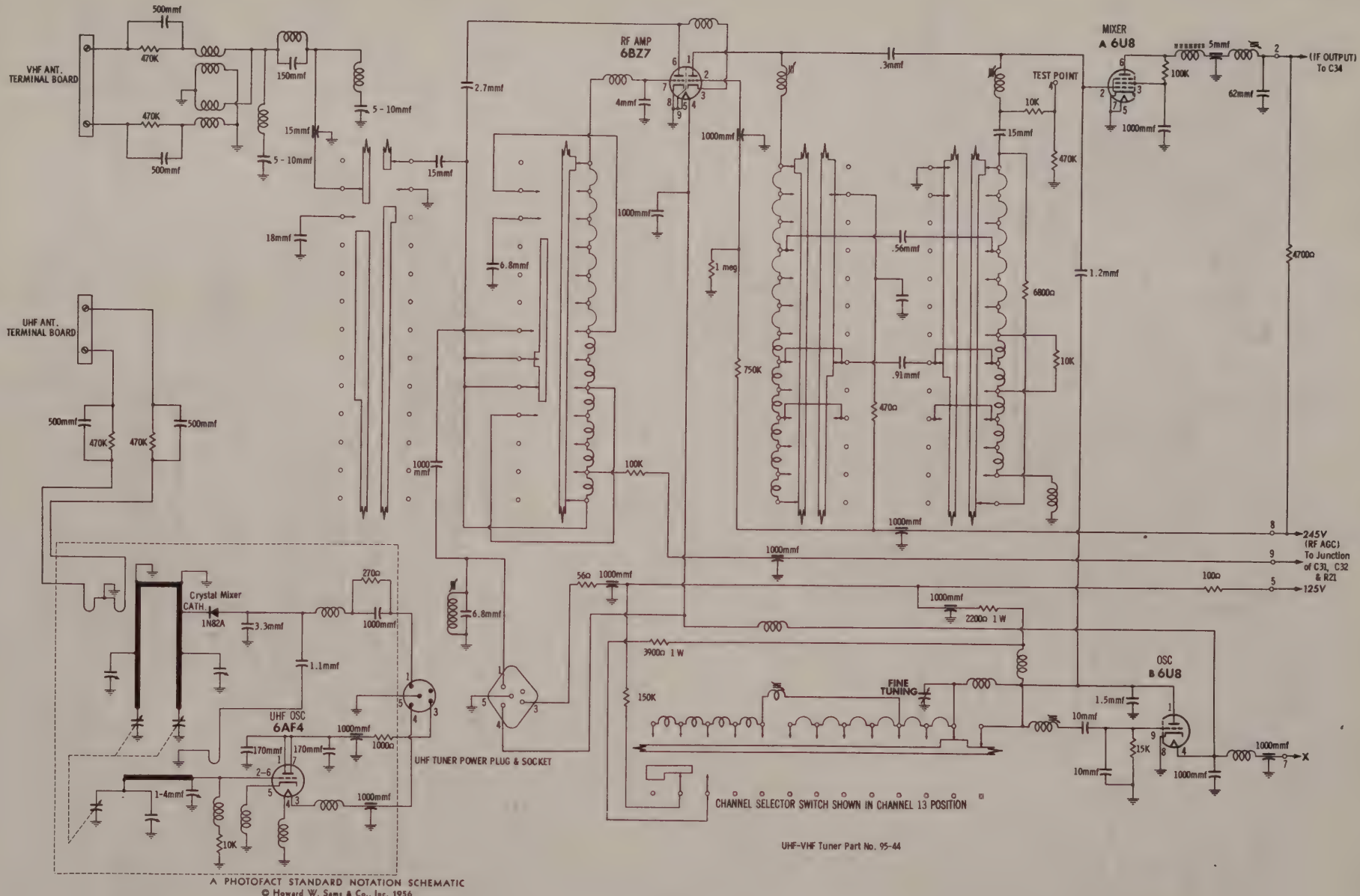
POWER SUPPLY FAILURE
No raster, no sound - **Selenium Rectifiers (M1 & M2)**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V2, V3, V4, V5, V6**
No pic, no sound, has snow - **V1, V2, V3**
No pic, has sound, has raster - **V6, V7, V17**
Has pic, no sound - **V8, V9, V10**
Overloaded picture - **V7, V9**

SYNC FAILURE
No vert. sync - **V8, V11**
No horiz. sync - **V8, V13**
No vert. or horiz. sync - **V6, V8**

SWEEP FAILURE
No raster, has sound - **V13, V14, V15, V16, V17**
No vertical deflection - **V11, V12**
Poor vert. linearity or foldover - **V11, V12**
Poor horiz. linearity or foldover - **V13, V14, V15**
Narrow picture - **V13, V14, V15, V16, M1, M2**
Vert. off freq. - **V8, V11**
Horiz. off freq. - **V8, V13**

SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187 (Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)



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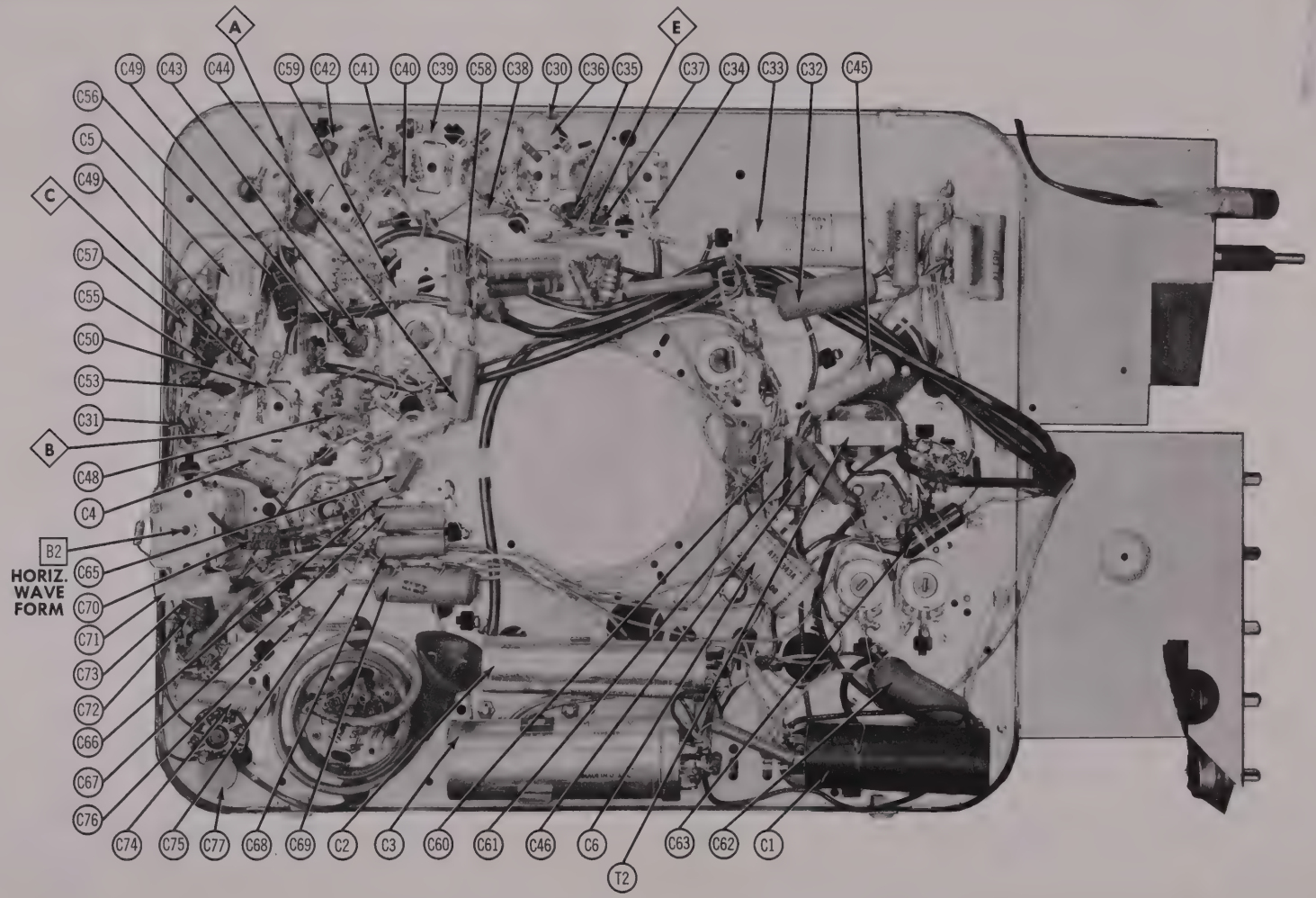
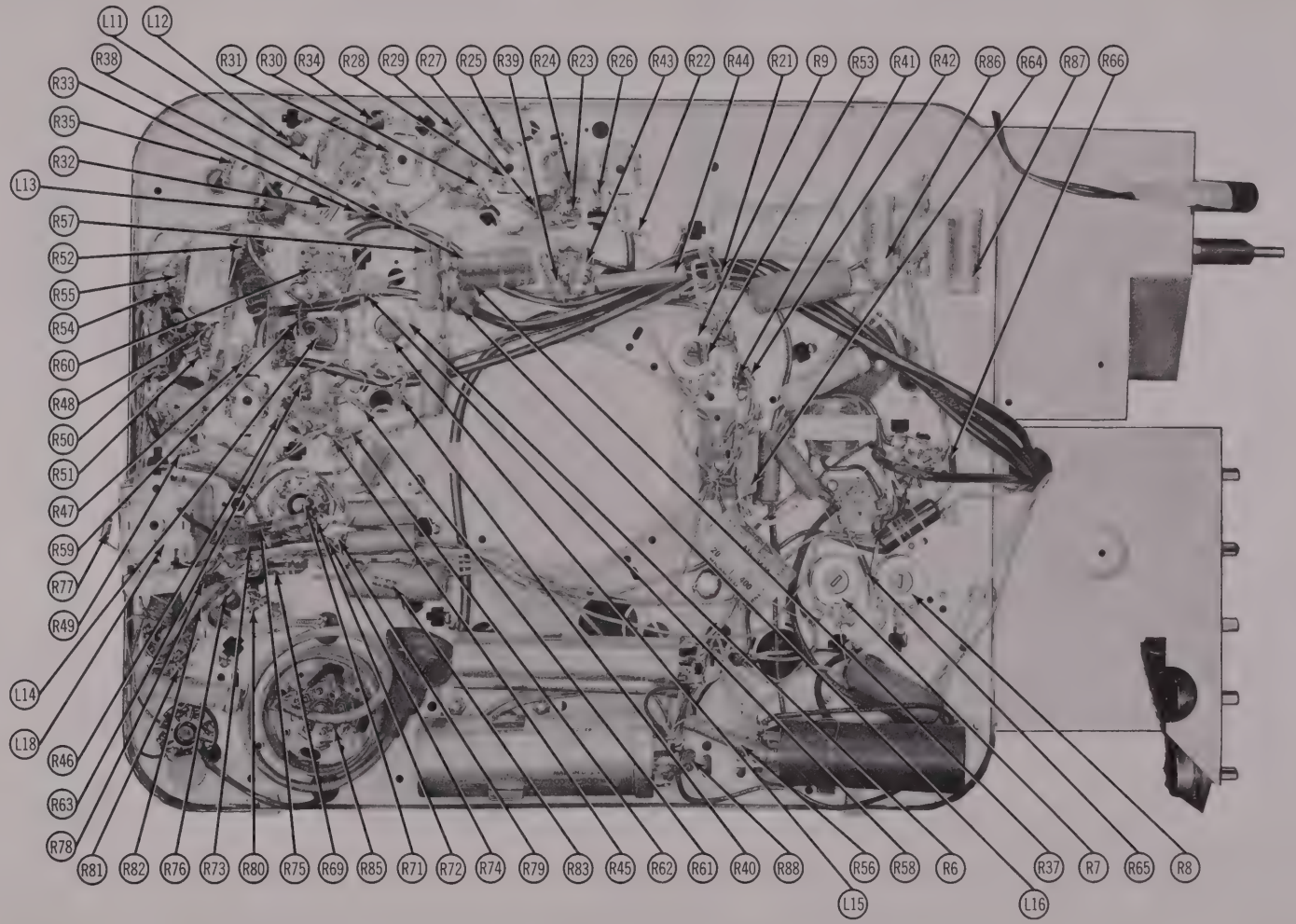
ALTERNATE VHF-UHF TUNER SCHEMATIC



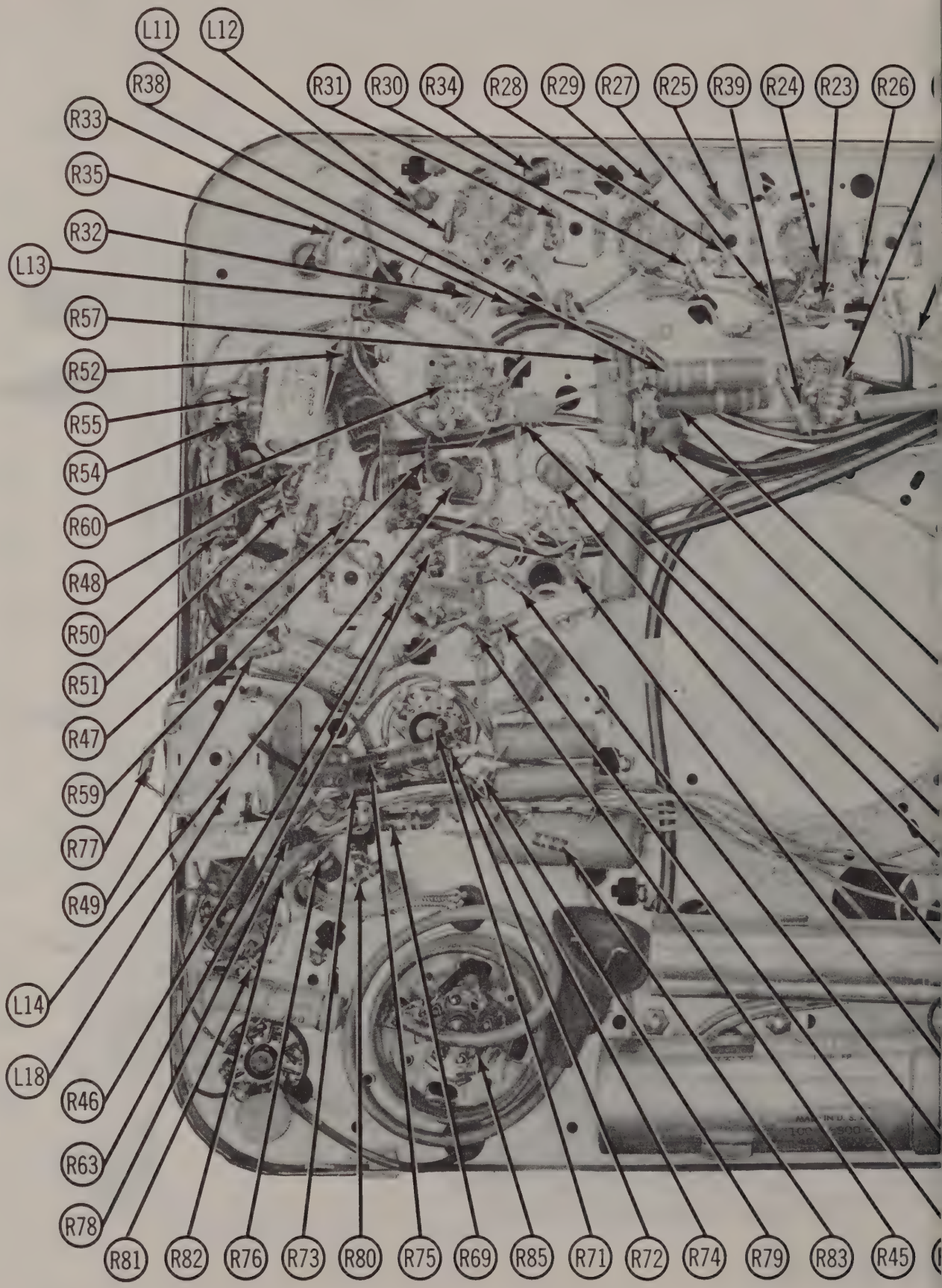
CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

SILVERTONE MODELS 61122, 61123, 61124, 61133, 61135, 61174, 61175, 61176, 61177, 61184, 61185, 61186, 61187 (Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187
(Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)



CHASSIS BOTTOM VIEW-RESISTOR

SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187
(Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500,
1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)

R AND ALIGNMENT IDENTIFICATION

CHASSIS TOP VIEW

SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187
(Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)

ALTERNATE VHF TUNER SCHEMATIC

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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VHF Tuner Part No. 95-75

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L9	3rd Video IF	.1Ω	.1Ω	10-678	17-5000	TV-125	6234	Note 3
L10	4th Video IF	.1Ω	.1Ω	10-679	17-5004	TV-125	6234	
L11	RF Coil	.1Ω		10-697				.6 Microhenries-Not used in some versions.
L12	Series Peaking Coil	9.3Ω		10-676	19-3125		6153	120 Microhenries
L13	Shunt Peaking Coil	12Ω		10-590	19-3250	TV-185	6130	269 Microhenries
L14A	4.5MC Trap	5.7Ω		10-674				
B	Sound IF	5.7Ω						
L15	Series Peaking Coil	11Ω		10-671	19-4250	TV-185 *	6173	220 Microhenries; Wound on 22KΩ resistor
L16	Shunt Peaking Coil	10.5Ω		10-609	19-3250	TV-185	6154	220 Microhenries
L17	Ratio Det.	4.2Ω	1.8ΩCT	10-689	17-3497	TV-115	6205	Tertiary Winding=.9Ω-Note 1

Note 1. Alternate Part No. 10-716.
Note 2. Alternate Part No. 10-695 or 10-719.
Note 3. Alternate Part No. 10-764.
* Parallel with 22KΩ resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	NOTES
L18	22Ω	57Ω	10-690	20-1402 *	TV-162 *	6183 *	205R1 *	H-100 *	HS-3 *	Waveform winding -38Ω

* Reverse coil mounting in can.

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA: SILVERTONE PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.	NOTES
M1	.280A	83-880	1023A	MR350	6S350	6QA2	350A	
M2	.280A	83-880	1023A	MR350	6S350	6QA2	350A	

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M3	Dial Light	89-7	#47
M4	Tuner	95-47	VHF-Chassis 528.39402, 528.39400, 528.39401, 528.38702, 528.38503, 528.38501, 528.38502, 528.38700, 528.38701, 528.38500
	Tuner	95-75	VHF-Chassis 528.44300, 528.44100, 528.44200
M5	Tuner	95-44	VHF-UHF Combination; Consists of VHF Section Part No. 95-45, & UHF Section Part No. 95-46. Chassis 528.39502, 528.39501, 528.39500, 528.38602, 528.38102, 528.38100, 528.38601, 528.38101, 528.38600,
	Tuner	95-64	VHF-UHF Combination; Consists of VHF Section Part No. 95-68, & UHF Section 95-66. Chassis 528.42600, 528.42700, 528.42800, 528.42601, 528.42701, 528.42801
M6	Centering Device	31-302	
M7	Ion Trap	83-830	
B3	Trimmer Cap.	20-152	Horiz. Range (25-280MMF)
	Cabinet	42-755	Model 6124
	Cabinet	42-754	Models 6123, 6122
	Cabinet	42-761	Models 6177, 6176
	Cabinet	42-758	Models 6175, 6174
	Cabinet	42-762	Models 6187, 6186
	Cabinet	42-756	Models 6133, 6132
	Cabinet	42-757	Models 6184, 6185
	Knob	52-630	VHF Channel Selector-Models 6122, 6124
	Knob	52-600	VHF Channel Selector-Models 6184, 6132, 6186, 6174, 6176
	Knob	52-589	VHF Channel Selector-Model 6123
	Knob	52-598	VHF Channel Selector-Models 6177, 6133, 6187, 6175, 6177
	Knob	52-595	VHF Fine Tuning-Models 6176, 6174, 6186, 6132, 6184, 6124, 6122
	Knob	52-588	VHF Fine Tuning-Models 6123, 6185, 6133, 6187, 6175, 6177
	Knob	52-587	UHF Channel Selector-Models 6123, 6185, 6133, 6187, 6175, 6177
	Disc	52-599	UHF Channel Indicator-Models 6177, 6175, 6187, 6133, 6185, 6123
	Knob	52-586	Auxiliary Controls (5 used) models 6176, 6174, 6186, 6132, 6184, 6177, 6175, 6187, 6133, 6185,
	Knob	52-633	Brightness-Model 6177
	Knob	52-579	On-Off-Volume-Models 6124, 6122, 6123
	Knob	52-580	Tone-Phono/TV-Models 6124, 6122, 6123
	Knob	52-576	Contrast-Models 6124, 6122, 6123
	Knob	52-578	Vertical Hold-Models 6124, 6122, 6123
	Knob	52-577	Horiz. Hold-Models 6124, 6122, 6123
	Safety Glass	48-106	Models 6176, 6174, 6186, 6184, 6175, 6187, 6185, 6177, 6124, 6122, 6123
	Safety Glass	48-108	Models 6132, 6133
	Mask	31-309	Models 6176, 6174, 6186, 6184, 6175, 6187, 6185, 6177, 6124, 6122, 6123
	Mask	31-312	Models 6132, 6133

DESCRIPTIONS
RS (cont)

RNELL-BILIER T No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
B4S22	817-02	PT4122	4TM-S22	
B2P22		PT4022	2TM-P22	
5T39	811-391		MS-339	
D1	811-102	MCB255	MS-21	
D47			MS-247	
B4S47		PT4147	4TM-S47	
3	NP0-338-470	ZT-5447	5TCC-Q47	
				Note 9
				Note 10
B6S47		PT6147	6TM-S47	
47	1R5KV-471	DC30347	10GA-T5	Note 11
9	801-001	DC-521	5HK-D1	Note 7
9	801-001	DC-521	5HK-D1	Note 7

place of C35 and C37.
pplication.
plication.
application.

application.
MF unit (part #15-339) in this application.
ion.
application.

LS

A IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
Q13-133	U-48	Volume
Not Req.	Not Req.	Attach to R1A.
76-1	US-26	Attach to R1A.
		Tone & Phono/TV Switch
Q11-201	U-2	Contrast
Not Req.	Not Req.	Attach to R3A.
† Q11-138	† U-54	Vert. Hold
Not Req.	Not Req.	Attach to R4A.
Q11-123	U-35	Horiz. Hold
Not Req.	Not Req.	Attach to R5A.
Q11-128	TA15L	Brightness
RQ	Not Req.	Attach to R6A.
† Q11-141	† TA56L	Height
RQ	Not Req.	Attach to R7A.
♦ Q11-114	♦ PTA-352L	Vert. Linearity-Note 1
TQ	Not Req.	Attach to R8A.
Q11-141	PTA56L	AGC - Note 2
Not Req.	Not Req.	Attach to R9A.

in this application.

e control and the lead connecting to the same terminal
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he control and the lead connecting to the same terminal
wn).

ss otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SILVERTONE PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R47	220Ω		602210K	BTS-220	
R48	22KΩ		602230M	BTS-22K	
R49	18KΩ		601830K	BTS-18K	
R50	10Meg		601060M	BTS-10Meg	
R51	270KΩ		602740K	BTS-270K	
R52	270KΩ		602740K	BTS-270K	Note 6
R53	2.2Meg		602250M	BTS-2.2Meg	Note 7
R54	470KΩ		604740M	BTS-470K	
R55	220Ω	1	602211K	BTA-220	
R56	1800Ω	4	61-22		Note 8
R57	15KΩ		601530M	BTS-15K	
R58	270KΩ		602740K	BTS-270K	
R59	2.2Meg		602250K	BTS-2.2Meg	
R60	680KΩ		606840K	BTS-680K	
R61	1800Ω		601820K	BTS-1800	
R62	2200Ω		602220K	BTS-2200	
R63	4700Ω		604720K	BTS-4700	
R64A B	38.4KΩ		†17-109		
R65	2.2Meg		602250M	BTS-2.2Meg	Note 9
R66	2.2Meg		602250M	BTS-2.2Meg	
R67	560Ω				
R68	560Ω				
R69	68KΩ	1	606831K		
R70	120KΩ	1	601241K		
R71	820KΩ		608240K		
R72	2.7Meg	1	602751K		
R73	150KΩ	1	601541K		
R74	8200Ω		608220K		
R75	100KΩ	1	601041K		
R76	150KΩ	1	601541K		
R77	8200Ω		608220K		
R78	33KΩ	1	603331K	BTA-33K	
R79	10KΩ		601030K		
R80	150KΩ		601540K		
R81	470KΩ		604740M		Note 10
R82	9000Ω	5	61-9		Note 11

RESISTORS (cont)

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SILVERTONE PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R83	100KΩ		601040K	BTS-100K	
R84	1000Ω				Note 12
R85	3.9Ω		60-973	BW½-3.9	
R86	2100Ω	15	61-7		
R87	120Ω	10	61-14	1 3/4A-125	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SILVERTONE PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R88	470Ω	1	604711K	BTA-470	
R89	5Ω	5	431009	FR-5.6	
R90	470KΩ		604740M	BTS-470K	
R91	1000Ω		601020K	BTS-1000	Note 6
R92	8.2Ω		60-939	BW½-8.2	Note 6

Note 1. Some versions use a 330Ω ½W resistor in this application (Part No. 603310K).
Note 2. Some versions use a 47Ω ½W resistor in this application (Part No. 604700K).
Note 3. Some versions use a 270KΩ ½W resistor in this application (Part 602740K).
Note 4. Some versions use a 4700Ω ½W resistor in this application (Part No. 604720K).
Note 5. Some versions use a 22KΩ ½W resistor in this application (Part No. 602230K).
Note 6. Not used in some versions.
Note 7. Some versions use a 3.9Meg 5% ½W resistor in this application (Part No. 603950J).
Note 8. Some versions use a 1KΩ 2W resistor in this application (Part No. 601022M).
Note 9. Some versions use a 470KΩ ½W resistor in this application (Part No. 604740M).
Note 10. Some versions use a 1Meg ½W resistor in this application (Part No. 601050M).
Note 11. Some versions use a 7500Ω 5W resistor in this application (Part No. 61-13).
Note 12. Some versions use an 820Ω ½W resistor in this application.
† Items R64A, R64B, C60 are combined in one unit.

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA SILVERTONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC	6.3V ⑨ .6A	6.3V ⑨ 9.2A		80-345					F-36A ①
					80-334 ②					F-36A ①

① Parallel and phase 6.3V ⑨ 3.5A ⑨ 6.3V ⑨ 3.5A ⑨ 6.3V ⑨ 3.5A windings.
② Used in Chassis 528.39500 and 528-39400.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA SILVERTONE PART No.	Halldorson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Vert. Osc. Trans.	80-328	B6702	A-3003	209T1 ①	V405	A-8125	26A03	A-97X
T3	Horiz. Output Trans.	80-336		HVO-40 & MWC-1 *					
T4	Vert. Output Trans.	80-347	Z1806	A-3039	226T1	V312	A-8141	26S54	A-104X
		80-325 ②	Z1806 ①	A-3039 ①	226T1 ①	V312 ①	A-8141 ①	26S54 ①	A-104X ①
T5A B	Yoke 90° Horiz.(19MH) Vert. (40MH)	10-698D ③ ⑥ or 10-698A③ ⑥ 10-711 ③ ⑦	DF607 ④ ⑤	MDF-92④ ⑤	235D1 ④ ⑤	Y90F19/43 ④ ⑤	DY-16A ④	Y-16 ④ ⑤	Y-41-1 ④ ⑤

① Drill new mounting hole(s).
② Silvertone alternate part number may be used in chassis 528.39400.
③ Includes plug and damping network resistors R67, R68, R84, and capacitor C78.
④ Make yoke connections the same as for yoke 10-698A shown on schematic.
⑤ Use original horizontal damping network if necessary.
⑥ Yoke used in chassis: 528.38502, 528.39400, 528,39401, 528.39402, 528.39500, 528.39501, 528.39502, 528.42800, and 528.44300.
⑦ Yoke used in chassis: 528.38100, 528.38101, 528.38102, 528.38500, 528.38501, 528.38503, 528.38600, 528.38601, 528.38602, 528.38700, 528.38701, 528,38702, 528.42600, 528.42601, 528.42700, 528.42701, 528.42801, 528.44100, and 528.44200.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

	ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
	4		4					
	3		3					
	2		2					
	1		1					
	A		Red Term. of MWC-1					
	G		Blue Term. of MWC-1					
Connect Width Coil Across →			Org. & Blk. terms. of MWC-1 across 2 & L					
Special Notes →			⑧ ⑨					

⑧ If AGC does not function properly reverse width coil primary or secondary.
⑨ If necessary to increase width increase capacity of capacitor C78.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA SILVERTONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T6	6KΩ	3-4Ω	80-342	Z1007	A3020	A3849	26S49	S-5Z	

SPEAKER

ITEM No.	RATINGS SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA SILVERTONE PART No.	QUAM PART No.	RCA TYPE No.	NOTES
SP1	6"	PM	6-8Ω	79-453	6A1Z6		The models covered in this folder use one, or a combination, of the listed speakers.
SP2	4"	PM	6-8Ω	79-456	4A07Z8.5		
	5"	PM	6-8Ω	79-452	5A1Z6		
	6"x 9"	PM	6-8Ω	79-454	6A2Z6		

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA SILVERTONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	Ant. Matching Trans.	.1ΩCT	0Ω	1921-1				
L2	Fil. Choke	0Ω		1894-1				
L3	Neut. Coil	0Ω		1785-68				
L4	Fil. Choke	0Ω		1894-2				
L5	RF Choke	1.6Ω		1911-5				
L6	Conv. Plate	.1Ω		1790-16				
L7	1st Video IF	.1Ω	.1Ω	10-680				
L8	2nd Video IF	.1Ω	.1Ω	10-677	17-5003	TV-128	6233	Includes 47.25MC Trap-Note 2

SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187 (Ch. 528.38100, 1, 2, 528.38500, 1, 2, 3, 528.38600, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44200, 528.44300, 1)

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	RF Amplifier	6BZ7	
V2	Mixer-Oscillator	5J6	
V3	1st. Video IF Amplifier	6CB6	
V4	2nd. Video IF Amplifier	6CB6	
V5	3rd. Video IF Amplifier-Sync Separator	6AW8	
V6	Video Output-Sync Separator	6AW8	
V7	AGC Keying	6AU8	
V8	Sound IF Amplifier-Sync Amplifier	6U8	

ITEM No	USE	TYPE	NOTES
V9	Radio Detector-AF Amp.-AGC Clamper	6T8	
V10	Audio Output	6V6GT	
V11	Vert. Oscillator	6C4	
V12	Vert. Output	6S4	
V13	Horiz. AFC-Horiz. Osc.	6SN7GT	
V14	Horiz. Output	6CD6GA	
V15	Damper	6AU4GTA	
V16	HV Rectifier	1B3GT	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	SILVERTONE PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V17	24VP4 ① 21ATP4 ①	24VP4 ① 21ATP4 ①	24VP4 ① 21ATP4 ①	24VP4 ① 21ATP4 ① 21ATP4A ②	① Aluminized ② Silver screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT	SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	150	150	18-328	AFHH-70	XA004	FP17	TM5-25	T-050	TVL-1428
C2A	●150	150	18-332	E33B87	XA004	FP17	TM5-25	T-050	TVL-1428
B	▲50	50	(Note 1)		BR508	TC39	TD-50-50	FM-0650	TVA-1308
C3A	●100	300	18-346 (Note 3)	AFH4-03-60		FP647		D-117	TVL-4434
B	▲20	300	(Note 3)			TC88		MTD-3230	TVA-1808
C	●40	300	(Note 2)						
D	20	300	(Note 3)						
C4	4	50	18-339	EKR50V5	BR550	TC30	TD-4-50	MMT-0505	TVA-1303
C5	50	25	18-335	PR535V50	BH502	TC29	TD-50-25	FM-0350	TVA-1306
C6	20	400	18-343	PR6450Y20	BR2045	TC78	TD-20-450	FM-4520	TVA-1709

Note 1. C2B is 100MFD in chassis 528.44300 and in chassis 528.38503 having a red paint dot near the chassis nameplate (C2 part #18-372).
Note 2. Some versions may use a 100-30-20-30MFD unit (part #18-333) or a 200-30-30-30MFD unit (part #18-330) in this application.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							
	CAP.	VOLT	SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C7	500	1000 VAC	18-304	HVD-15-470	DD30-501	VT47	IR5EV-471	DC30347	10GA-T5	
C9	500	1000 VAC	18-304	HVD-15-470	DD30-501	VT47	IR5EV-471	DC30347	10GA-T5	
C9	13		3042-5							
C10	4		163-409							
C11	1.5		3101-169							
C12	1000		3033-23	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	
C13	1000			EF-001	MFT-1000				5HK-D1	
C14	100			NPO-ED100	TCZ-100	TZ30	NPO-327-101	ZT-531	5TCC-T1	
C15	1000		3033-23	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	
C16	1000		3033-23	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	
C17	.36		3101-368							
C18	.94		3101-585							
C19	1.5		3101-169							
C20	470		136-1							
C21	.39		3101-396							
C22	10		169-100							
C23	1.5		166-159							
C24	1000		3033-53	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	
C25	63		161-632				2037	NPO-337-630		
C26	15		152-150	NPO-ED15	TCZ-15	TE11	NPO6K-150		5TCC-Q15	
C27	150		161-151		TCZ-150		NPO-334-151			
C28	5000		3033-7	BPD-005	DD-502	KD60	511-005	DC-535	5HK-D5	
C29	1000		3033-23	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	
C30	1000		18-347	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	
C31	5000		18-320	BPD-005	DD-502	KD60	511-005	DC-535	5HK-D5	
C32	.22	200	18-333	PX820-22		CUZ2P22		PT2022	5TM-P22	
C33	.47	600	18-340	P668N-47		CUB4P47		PT6047	4TM-P47	
C34	100		18-322							
C35	5000		18-320	BPD-005	DD-502	KD60	511-005	DC-535	5HK-D5	Note 3
C36	500		18-303	DI-00056	D6-561	GD63	511-561	UC-5356	5GA-T56	
C37	1000		18-347	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	Note 3
C38A	1000		18-286	BPD-EX001	DD3-102	DKD69	513-001	DCD-531	5HK-ID1	
B	1000									
C39	1000		18-347	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	Note 4
C40	680		18-290	DI-00068	D6-681	KD65	511-681	UC-5368	5GA-T68	
C41A	1000		18-286	BPD-EX001	DD3-102	DKD69	513-001	DCD-531	5HK-ID1	
B	1000									
C42	15		18-324							
C43	33									
C44	.047	400	18-345	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C45	.047	400	18-345	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	Note 5
C46	.022	400	18-348	BPD-03	DF-303	CUB4S22	417-03	PT4122	4TM-S22	Note 5
C47	33									
C48A	5000		18-294	BPD-EX0047	DD3-502	DKD79	511-005	DC-535	5HK-ID5	
B	5000						511-005	DC-535		
C49	500		18-303	DI-00058	D6-561	GD63	511-561	UC-5356	5GA-T56	
C50	2000		18-288	BPD-002	DD-202	KD72	501-002	DC-532	5HK-D2	
C51	10000		18-211	BPD-01	DD-103	KD62	511-01	DC-511	5HK-S1	
C52	.047	600	18-347	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C53	5000		18-320	BPD-005	DD-502	KD60	511-005	DC-535	5HK-D5	
C54	5000		18-338	BPD-005	DD-502	KD60	511-005	DC-535	5HK-D5	
C55	10000		18-211	BPD-01	DD-103	KD62	511-01	DC-511	5HK-S1	
C56	.1	400	18-364	P668N-1	DF-104	CUB4P1		PT601	4TM-P1	Note 7
C57	1000	3000	18-347	HVD-30-1000	DD30-102	VID1	3KV-102	DC3021	30GA-D1	
C58	.022	400	18-348	BPD-03	DF-303	CUB4S22	417-03	PT4123	4TM-S22	
C59	150		18-295	N750-4H100	TCN-150	N046	N750-323-151		5TCU-T15	
C60	13000		117-109	19A-501	19C-304				19BX12	
C61	.0068	600	18-278						MB-368	
C62	.1	600	18-298	P668N-1	DF-104	CUB4P1		PT601	4TM-P1	Note 8
C63	.047	400	18-347	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C64	.022	400	18-383	BPD-03	DF-303	CUB4S22	417-03	PT4123	4TM-S22	
C65	180	500	18-300	NPO-ED180	TCZ-180	KD81T58	NPO-334-181		MB-318	
C66	2000		18-338	BPD-002	DD-202	KD72	501-002	DC-532	5HK-D2	
C67	.047	400	18-345	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont'd)

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C68	.022	300	18-353	BPD-03	DF-303	CUB4S22	417-03	PT4123	4TM-S22	
C69	.33	300	18-353	PX820-33		CUB3P33		PT4033	3TM-P33	
C70	390	500	18-373		D6-391	5HS739	511-391		MS-339	
C71	.01	600	18-363							
C72	1000	300	18-288	1464-001		1R5DI	511-103	MC8S88	MS-21	
C73	.0047	600	18-333	1464-0047		1R5D47			MS-247	
C74	.047	400	18-345	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C75	47		18-326	NPO-D47	TCS-47	Z033	NPO-338-470		2T-S447	5TCC-Q47
C76	100		18-282		TCL-47					
C77	39	4000	18-356		DD30-390					Note 9
C78	72	3000								Note 10
C79	1.0	600	18-647	BPD-06	DF-503	CUB6S47		PT6147	6TM-S47	
C80	500	1000		HVD-15-470	DD30-501	VT47	IR5EV-471	DC30347	10GA-T5	Note 11
C81	1000		18-347	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	Note 7
C82	1000	1500	18-347	BPD-001	DD-102	KD69	501-001	DC-531	5HK-D1	Note 7

† Items C6O, R64A, and R64B are combined in one unit.
Note 3. Some versions may use a dual 1000MMF unit (part #15-386) in place of C25 and C37.
Note 4. Some versions may use a 560MMF unit (part #15-503) in this application.
Note 5. Some versions may use a .1MFD unit (part #16-364) in this application.
Note 6. Some versions may use a .047MFD unit (part #16-245) in this application.
Note 7. Not used in some versions.
Note 8. Some versions may use a .0047MFD unit (part #16-333) in this application.
Note 9. Some versions may use an 18MMF unit (part #15-390) or a 56MMF unit (part #15-339) in this application.
Note 10. Some versions may use a 68MMF or 3KV unit in this application.
Note 11. Some versions may use a 500GMMF unit (part #15-308) in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SILVERTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	500Ω	½	A24-221	BSK-60-S	A47-500K-Z	Q13-133	U-48	Volume
B	Shaft		Not Req.	Not Req.	KS8-3	Not Req.	Not Req.	Attach to R1A.
C	Switch		Not Req.	Not Req.	SWR-13	76-1	U8-26	Attach to R1A.
R2	5MEG	½	A25-58					Tone & Phono/TV Switch
R3A	200Ω	½	A25-41	AB-2	A47-500-S	Q11-201	U-3	Contrast
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R3A.
R4A	2.2Meg with 1Meg stop	½	A25-50	† AB-69	† A47-1Meg-S	† Q11-138	† U-84	Vert. Hold
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R4A.
R5A	50KΩ	½	A25-42	AB-31	A47-50K-S	Q11-153	U-35	Horiz. Hold
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R5A.
R6A	100KΩ	½	A25-40	AB-40	A47-100K-S	Q11-138	TA16L	Brightness
B	Shaft		Not Req.	AK-1	FKE-1	BQ	Not Req.	Attach to R6A.
R7A	5Meg with 1Meg stop	½	A25-43	† AB-86	† A47-4Meg-S	† Q11-141	† TA56L	Height
B	Shaft		Not Req.	AK-1	FKE-1	BQ	Not Req.	Attach to R7A.
R8A	1000Ω with 100Ω*	½	A25-53	* AB-9	* A47-1000-S	* Q11-114	* PTA-352L	Vert. Linearity-Note 1
B	Shaft		Not Req.	AK-19	KS8-3	TQ	Not Req.	Attach to R8A.
R9A	4Meg	½	A25-58	AB-86	A47-4Meg-S	Q11-141	PTA56L	AGC - Note 2
B	Shaft		Not Req.	AK-19	KS8-3	Not Req.	Not Req.	Attach to R9A.

Note 1. Some versions will use an alternate control Part No. 25-77 in this application.
Note 2. Not used in some versions.
† Connect a 1Meg resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control (control viewed from shaft end, terminals down).
* Connect a 100Ω resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control (control viewed from shaft end, terminals down).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SILVERTONE PART No.	IRC PART No.	
R10	470KΩ		604740M	BTS-470K	
R11	470KΩ		604740M	BTS-470K	
R12	470KΩ			BTS-470K	
R13	1Meg		101-105	BTS-1Meg	
R14	750Ω	5%	101-754	BTS-750K 5%	
R15	47Ω		106-471	BTS-47Ω	
R16	15KΩ		106-153		
R17	5600Ω		106-562	BTS-5600	
R18	2330Ω		106-234	BTS-330K	
R19	100KΩ		106-103	BTS-100K	
R20	15KΩ		106-153	BTS-15K	
R21	470KΩ		604760K	BTS-470K	
R22	2330Ω		604723K	BTS-330K	
R23	39KΩ		602893K	BTS-39K	
R24	5600Ω		605620K		
R25	100Ω		601810M	BTS-150	Note 1
R26	39Ω		602900K	BTS-39	Note 2
R27	1000Ω		602830K	BTS-1000	
R28	18KΩ		602830K		
R29	150Ω		601810M	BTS-150	Note 1
R30	56Ω		605600K	BTS-56	Note 3
R31	56KΩ		605830K		
R32	18KΩ		602830K		Note 6
R33	1000Ω		602900M	BTS-1000	
R34	2330Ω		602320K	BTS-330	
R35	4700Ω		604723K	BTS-4700	
R36	18Ω		601800K	BTS-18	
R37	5600Ω	3	606823K	BTS-5600	
R38	6800Ω	2	606823K	BTS-6800	
R39	1200Ω	1	601821K	BTA-1200	
R40	2200KΩ		602240K	BTS-230K	Note 3
R41	6800Ω		606830K	BTS-6800	Note 4
R42	3700Ω		603723K	BTS-3700	Note 4, 5
R43	47KΩ	1	604730K	BTA-4700	
R44	27KΩ	4	61-31		
R45	2200Ω		602230K	BTS-2200	
R46	560Ω		605610K	BTS-560	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SILVERTONE PART No.	IRC PART No.	
R47	220Ω		602210K	BTS-220	
R48	23KΩ		602230M	BTS-23K	
R49	18KΩ		601830K	BTS-18K	
R50	10Meg		601060M	BTS-10Meg	
R51	470KΩ		603740K	BTS-470K	
R52	3700Ω		603760K	BTS-370K	Note 6
R53	2.2Meg		602230M	BTS-2.2Meg	Note 7
R54	470KΩ		604760M	BTS-470K	
R55	220Ω	1	60321K	BTA-220	
R56	180Ω	4	61-23		Note 8
R57	15KΩ		601530M	BTS-15K	
R58	370KΩ		603760K	BTS-370K	
R59	2.2Meg		602250K	BTS-2.2Meg	
R60	680KΩ		606840K	BTS-680K	
R61	180Ω		601830K	BTS-180	
R62	3300Ω		603830K	BTS-3300	
R63	4700Ω		604730K	BTS-4700	
R64A	36.4KΩ		†17-109		
B					
R65	2.2Meg		602250M	BTS-2.2Meg	Note 9
R66	2.2Meg		602250M	BTS-2.2Meg	
R67	56Ω				
R68	180Ω				
R69	68KΩ	1	606831K		
R70	130KΩ	1	601241K		
R71	620KΩ		606240K		
R72	2.7Meg	1	603751K		
R73	150KΩ	1	601541K		
R74	820Ω		602230K		
R75	100KΩ	1	601041K		
R76	150KΩ	1	601541K		
R77	820Ω		602230K		
R78	33KΩ	1	603331K	BTA-33K	
R79	10KΩ		601030K		
R80	150KΩ		601540K		
R81	470KΩ		604740M		Note 10
R82	9000Ω	5	61-9		Note 11

RESISTORS (cont)

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SILVERTONE PART No.	IRC PART No.	
R83	100KΩ		603040K	BTS-100K	
R84	1000Ω				Note 12
R85	3.9Ω		60-973	BW-½ .9	
R86	2000Ω	15	61-7		
R87	120Ω	10	61-14	1 ¾A-125	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SILVERTONE PART No.	IRC PART No.	
R89	470Ω	1	604710K	BTA-470	
R90	5Ω	5	43B09	FR-5.0	
R91	470KΩ		604740M	BTS-470K	
R91	100Ω		602830K	BTS-100	Note 6
R92	8.2Ω		60-932	BW-½ .8.2	Note 6

Note 1. Some versions use a 330Ω ½W resistor in this application (Part No. 603310K).
Note 2. Some versions use a 47Ω ½W resistor in this application (Part No. 604700K).
Note 3. Some versions use a 270KΩ ½W resistor in this application (Part 603740K).
Note 4. Some versions use a 4700Ω ½W resistor in this application (Part No. 604720K).
Note 5. Some versions use a 22KΩ ½W resistor in this application (Part No. 602230K).
Note 6. Not used in some versions.
Note 7. Some versions use a 2.2Meg 5% ½W resistor in this application (Part No. 603950J).
Note 8. Some versions use a 1KΩ 1W resistor in this application (Part No. 60423M).
Note 9. Some versions use a 470KΩ 1W resistor in this application (Part No. 604740M).
Note 10. Some versions use a 1Meg 1W resistor in this application (Part No. 601050M).
Note 11. Some versions use a 7500Ω 5W resistor in this application (Part No. 61-13).
Note 12. Some versions use an 820Ω 1W resistor in this application.
† Items R64A, R64B, C80 are combined in one unit.

TRANSFORMER (FILAMENT)

ITEM No.	RATING			REPLACEMENT DATA				
	PRI.	SEC 1	SEC 2	SILVERTONE PART No.	Halldorson PART No.	Merit PART No	Stancor PART No.	Triad PART No.
T1	117VAC	6.3V ▲.6A	6.3V ▲ 2.2A	80-345 80-334 ②			F-36A ① F-36A ②	

① Parallel and phase 6.3V ③ 3.5A ④ 6.3V ⑤ 3.5A ⑥ 6.3V ⑦ 3.5A windings.
② Used in Chassis 528.38500 and 528-39400.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							
		SILVERTONE PART No	Halldorson PART No	Merit PART No	RCA TYPE No	Ram PART No	Stancor PART No	Thordarson PART No	Triad PART No
T2	Vert. Osc. Trans.	80-338	Note 2	A-3003	32VT1	V405	A-8238	26A03	A-97X
T3	Horiz. Output Trans.	80-336		HVO-40 & MWC-1 *					
T4	Vert. Output Trans.	80-347	Z1806	32VT1	V3i2	A-8141	24S54		A-104X
		80-335 ①	Z1806 ①	A-3039 ①	32VT1 ①	A-8141 ①	24S54 ①		A-104X ①
T5A	Yoke 90° Horiz.(12MHz)	10-696D ①	DF607 ①	MDF-92 ①	23SD1 ①				T-61-J ①
B	Vert. (60MHz)	② ③							②
		10-698A ④							
		10-711 ⑤							

① Drill new mounting hole(s).
② Silvertone alternate part number may be used in chassis 528.39400.
③ Includes ring and damping network resistors R37, R38, R84, and capacitor C78.
④ Make yoke connections the same as for yoke 10-692A shown on schematic.
⑤ Use original horizontal damping network if necessary.
⑥ Yoke used in chassis: 528.38503, 528.38600, 528.38401, 528.39402, 528.39503, 528.39501, 528.39803, 528.42800, and 528.44300.
⑦ Yoke used in chassis: 528.38100, 528.38101, 528.38103, 528.38500, 528.38501, 528.38503, 528.38600, 528.38601, 528.38603, 528.38700, 528.38701, 528.38703, 528.42600, 528.42601, 528.42700, 528.42701, 528.44000, and 528.44300.

***HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA**

Use Original Width Coil Unless Replacement Type Is Listed

	ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
	4		4					
	3		3					
	2		2					
	1		1					
	A		Red Term. of MWC-1					
	G		Blue Term. of MWC-1					
Connect With Coil Arms			Org. & Blk. terms. of MWC-1 across 2 & 1					
Special Notes		① ②	①					

① If AGC does not function properly reverse wires with coil primary or secondary.
② If necessary to increase width increase capacity of capacitor C78.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					
	PRI.	SEC.	SILVERTONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T6	6KΩ	3-4Ω	80-343	Z1007	A3020	A3849	26S49	S-52

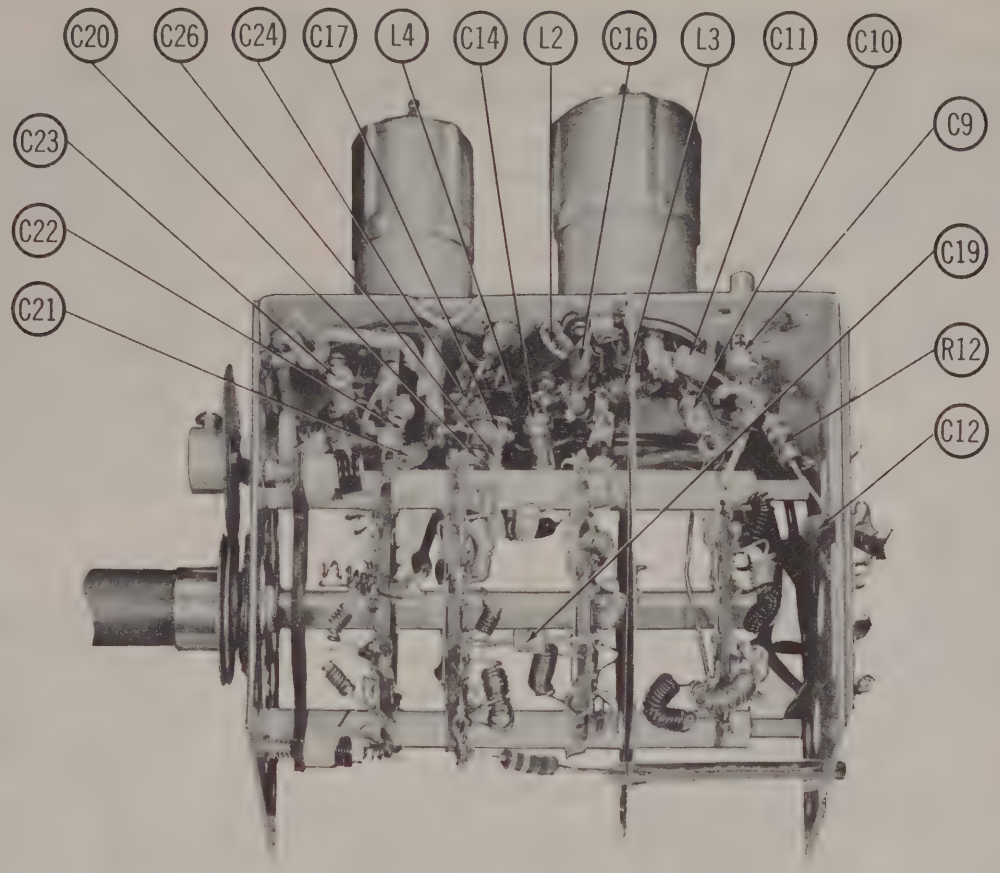
SPEAKER

ITEM No.	RATINGS				REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.		SILVERTONE PART No.	QUAM PART No.	RCA TYPE No	
SP1	6"	PM	8-Ω		79-453	6A12S		The models covered in this folder use one, or a combination, of the listed speakers.
SP2	4"	PM	8-Ω		79-456	4A07Z8.5		
	5"	PM	8-Ω		79-452	5A12S		
	6"x 9"	PM	8-Ω		79-454	69A22S		

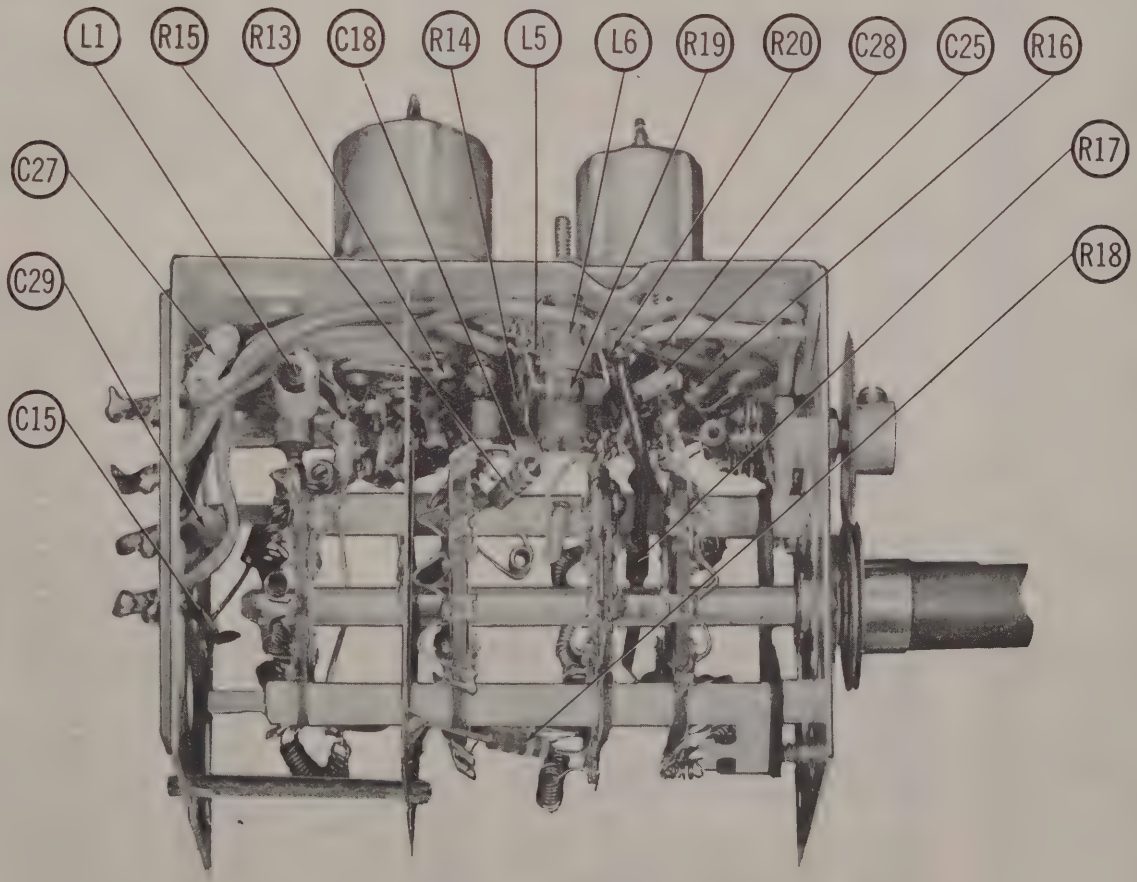
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Matching Trans.	.8OCT	0Ω	1021-1				
L2	Fil. Choke	0Ω		1894-1				
L3	Vert. Coil	0Ω		1789-65				
L4	Fil. Choke	0Ω		1894-3				
L5	RF Choke	1.6Ω		1021-5				
L6	Conv. Plate	1.5Ω		1790-16				
L7	1st Video IF	.8Ω	.3Ω	20-680				
L8	2nd Video IF	.8Ω	.3Ω	20-677	17-5003	TV-128	6323	Includes 47.25MC Trap-Blue

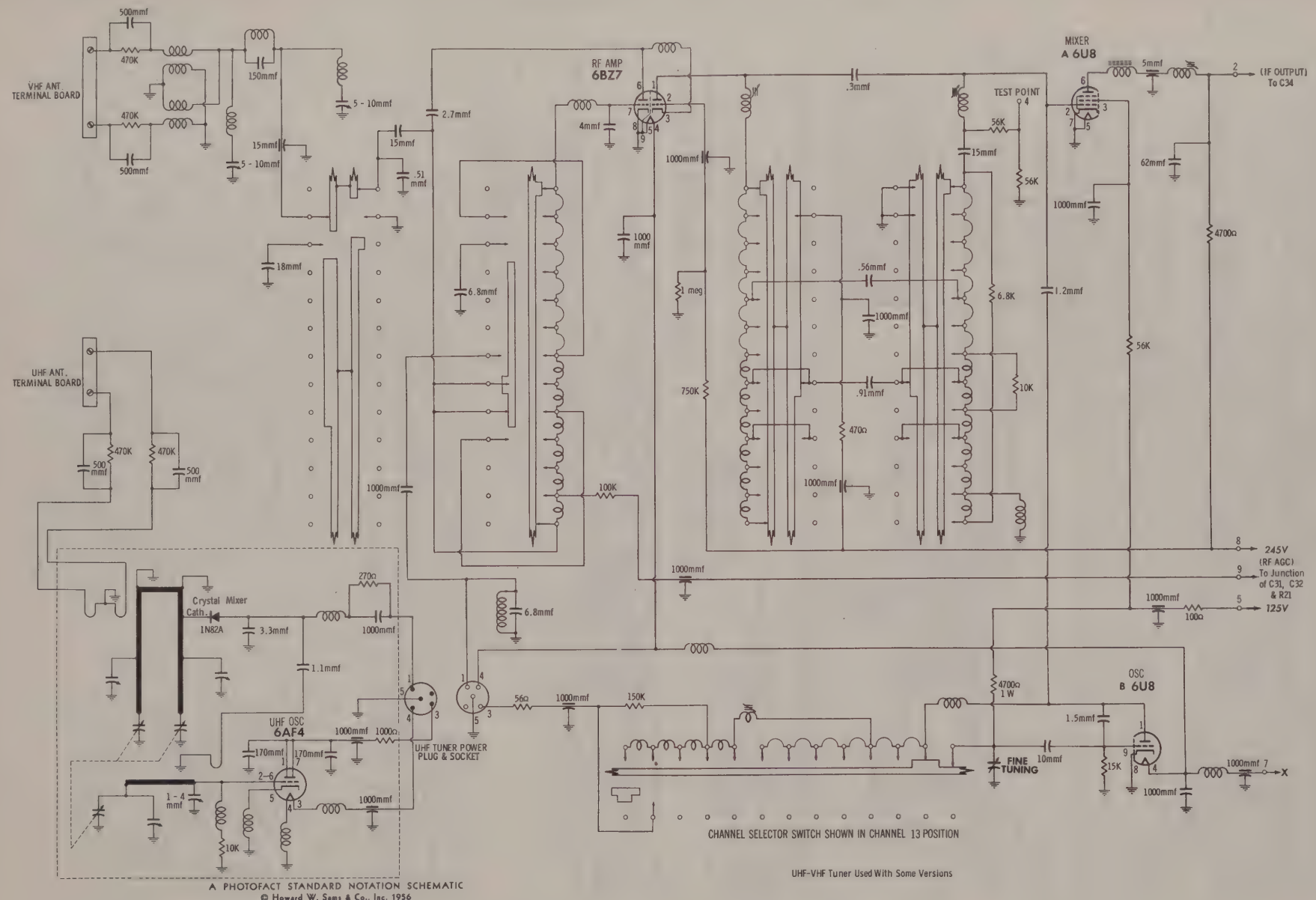
SILVERTONE MODELS 6122, 6123, 6124, 6132, 6133, 6174, 6175, 6176, 6177, 6184, 6185, 6186, 6187
1, 2, 528.38100, 1, 2, 528.38500, 1, 2, 528.38700, 1, 2, 528.39400, 1, 2, 528.39500, 1, 2, 528.42600, 1, 2, 528.42700, 1, 2, 528.42800, 1, 2, 528.44100, 528.44300, 1)



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE


VHF ANT. TERMINAL BOARD
UHF ANT. TERMINAL BOARD
RF AMP 6BZ7
MIXER A 6U8
OSC B 6U8
UHF OSC 6AF4
Crystal Mixer Cath.
1N82A
UHF TUNER POWER PLUG & SOCKET
TEST POINT
FINE TUNING
(IF OUTPUT) To C34
245V (RF AGC) To Junction of C31, C32 & R21
125V
X
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
UHF-VHF Tuner Used With Some Versions
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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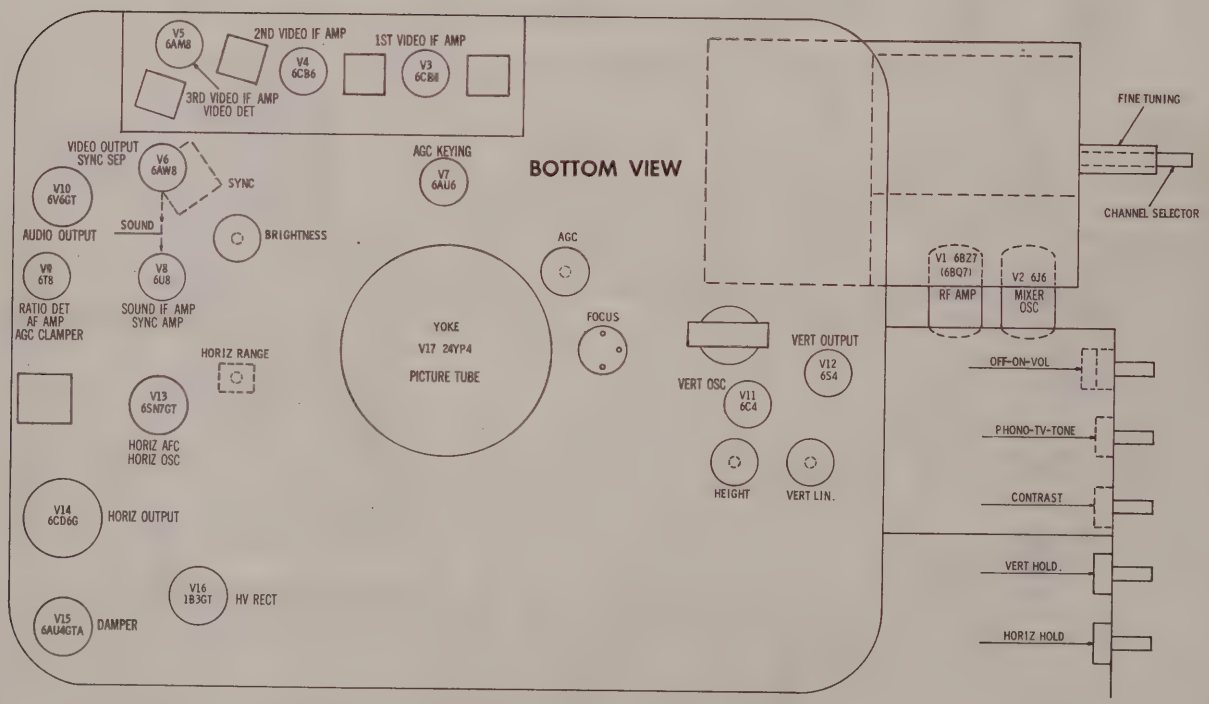
ALTERNATE VHF-UHF TUNER SCHEMATIC

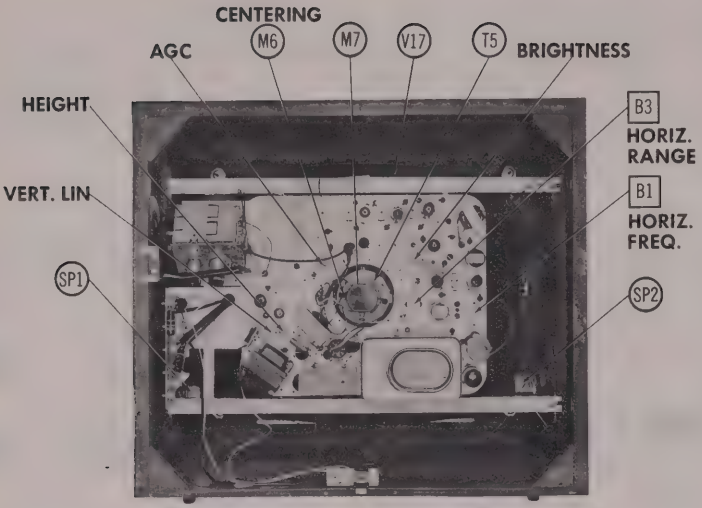
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ7	† 600Ω	400K	INF	.1Ω	0Ω	INF	600K	0Ω	0Ω
V2	6J6	† 10K	† 3.1K	0Ω	.1Ω	220K	15KΩ	0Ω		
V3	6CB6	44K	39Ω	0Ω	.1Ω	† 2.2K	† 2.2K	0Ω		
V4	6CB6	40K	56Ω	0Ω	.1Ω	† 2.2K	† 2.2K	0Ω		
V5	6AM8	220Ω	.1Ω	† 3.1K	.1Ω	0Ω	† 3.1K	.2Ω	4.7K	0Ω
V6	6AW8	0Ω	2.2Meg	† 680K	0Ω	.1Ω	100Ω	4.7K	† 2.1K	† 5.2K
V7	6AU6	† 1.8K	† 600Ω	† 600Ω	† 600Ω	250K	* 27K	† 600Ω		
V8	6U8	† 6K	5.7Ω	† 4.3K	.1Ω	0Ω	† 4.3K	560Ω	4.7K	† 680K
V9	6T8	INF	18K	INF	0Ω	.1Ω	600K	0Ω	10Meg	† 550K
V10	6V6GT	NC	.1Ω	† 2K	† 1.8K	470K	NC	0Ω	220Ω	
V11	6C4	* 5Meg	NC	.1Ω	0Ω	* 5Meg	1.2Meg	210Ω		
V12	6S4	NC	2K	2.2Meg	0Ω	.1Ω	2.2Meg	NC	NC	* 1.6K
V13	6SN7GT	1Meg	† 50K	300K	250K	† 33K	0Ω	0Ω	.1Ω	
V14	6CD6GA	NC	.1Ω	0Ω	NC	470K	NC	0Ω	† 9K	TOP CAP * 16Ω
V15	6AU4GTA	NC	NC	80K	NC	† 120Ω	NC	.1Ω	0Ω	
V16	1B3GT		PINS	1-8	HAVE	INF	RESISTANCE			TOP CAP * 500Ω
V17	24YP4	0Ω	6.8K	PIN 6 † 120Ω	PIN 10 * 13Ω	PIN 11 † 250K	PIN 12 .1Ω			

† MEASURED FROM OUTPUT OF M2.
* MEASURED FROM PIN 3 OF V15.
TP - TIE POINT
NC - NO CONNECTION



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

HORIZONTAL FREQUENCY ADJUSTMENT

1. Turn the horizontal range trimmer (B3) maximum clockwise.

2. If the picture cannot be synchronized with the horizontal hold control , set the control to its mid-range position and adjust the horizontal frequency slug (B1) until the picture is in sync. If the picture will not synchronize, turn the horizontal waveform slug (B4) several turns counter clockwise and readjust B1 until the picture synchronizes.

HORIZONTAL WAVEFORM ADJUSTMENT

Connect the vertical amplifier thru a low capacity probe (Fig.4) to terminal "C" of L18. If necessary, adjust B2 for waveform similar to Fig. 5 with the narrow peak 10% higher than the broad peak. Keep the picture in sync during this adjustment with the horizontal hold control and B1. Remove the scope.

HORIZONTAL RANGE TRIMMER ADJUSTMENT

1. Turn the horizontal hold control maximum counter clockwise. Switch off channel and back again. If the picture does not lose sync, turn B1 counter clockwise until the picture loses sync when switching off channel and back again. Adjust B1 clockwise until the picture just pulls into sync.

2. Turn the horizontal hold control maximum clockwise . Switch off channel and back again. If the picture does not pull into sync, turn the horizontal range trimmer clockwise until the picture pulls into sync.

3. Due to reaction between B1 and B3 it may be necessary to repeat steps 1 and 2 several times before proper synchronization is obtained. When properly adjusted, the picture should remain in sync at both extreme settings of the horizontal hold control when switching off channel and back again.

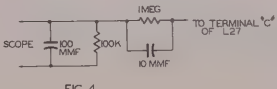


FIG. 4

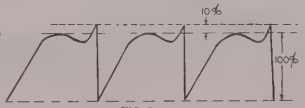
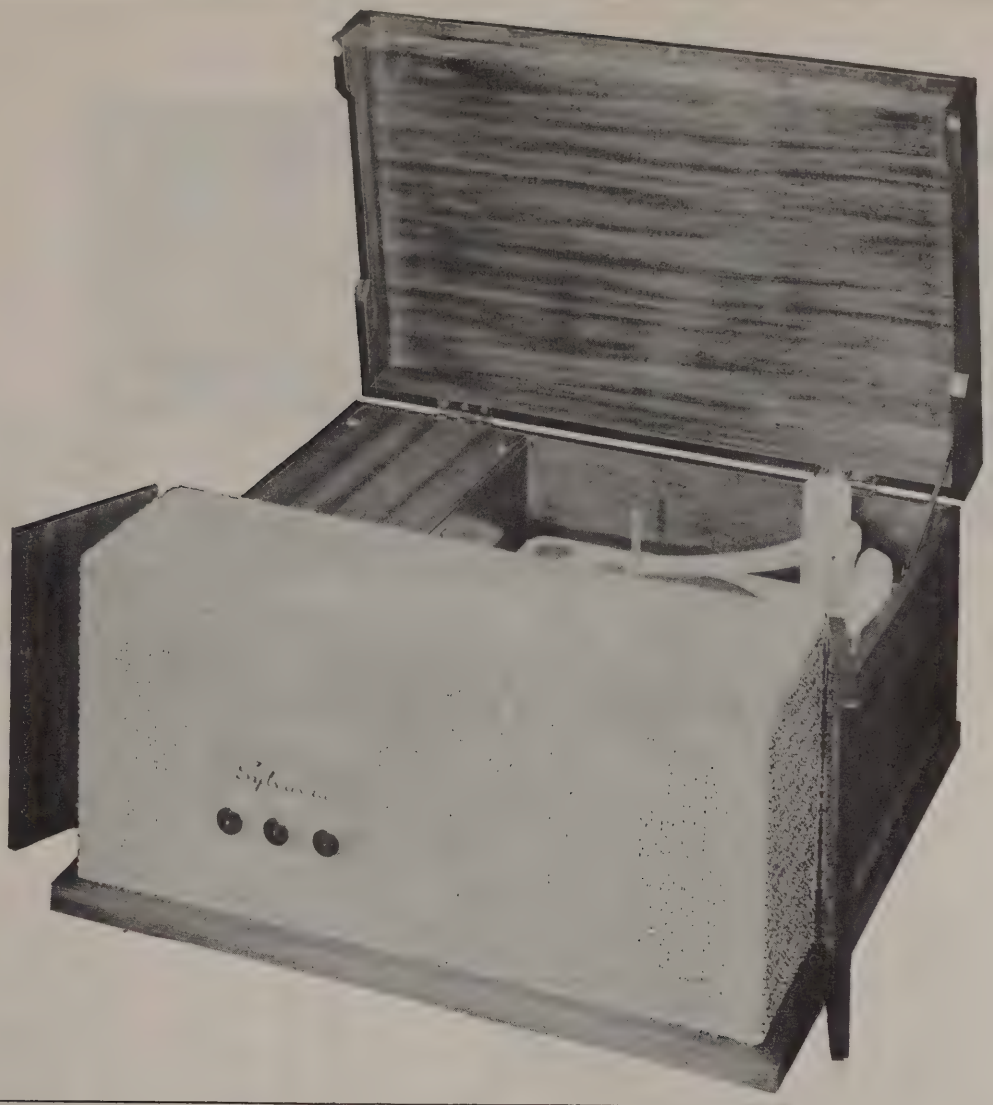


FIG. 5

SYLVANIA MODELS
919, 969 (Ch. 1-609)



SYLVANIA MODELS
919, 969 (Ch. 1-609)

TRADE NAME	Sylvania Models 919, 969 (Ch. 1-609)
MANUFACTURER	Sylvania Electric Prod., Inc., Radio & Tel. Div., 254 Rano St., Buffalo 7, N. Y.
TYPE SET	AC Operated Phono Amplifier with 3 Speed Automatic Record Changer
TUBES (Four)	Types 12AX7 AF Amp.-Phase Inv., (2) 6V6GT Output, 5Y3GT Rectifier
POWER SUPPLY	105-125 Volts AC-60 Cycles RATING .52 Amp. @ 117 Volts AC

FOR SERVICE INFORMATION ON RECORD CHANGER-SEE SIMILAR COLLARO MODEL RC-54-PHOTOFACT SET 285-FOLDER 6 OR RECORD CHANGER MANUAL CM-7.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

SYLVANIA
Model 919 (Ch. 1-609)

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amp. -Phase Inv.	12AX7	
V2	Output	6V6GT	
V3	Output	6V6GT	
V4	Rectifier	5Y3GT	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	SYLVANIA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲ 20	450	161-4021	AFH4-14	D013	FP444	TMQ12	Q-040	TVL-4763
B	■ 20	450							
C	▲ 20	450							
D	20	450							
C2	10	25	161-1000	PRS25V10	BR102	TC22	TD-10-25	FM-0210	TVA-1204

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	SYLVANIA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	820		166-0820	SI820	D6-821	K065	GP2K-821		5GA-T82	
C4	18		166-0018	SI18	D6-180	TP12	GP1K-180	UC-5418	5GA-Q18	
C5	27		166-0027	SI27	D6-270	TP26	GP1K-270	UC-5427	5GA-Q27	
C6	4700		†190-0025	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C7	3300		♦190-0024	BPD-0033	D6-332	K077	811-0033	UC-5233	5HK-D33	
C8	.047	400	160-06147	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C9	.047	600	160-06147	BPD-05	DF-503	CUB6S47		PT6147	6TM-S47	
C10	.047	600	160-06147	BPD-05	DF-503	CUB6S47		PT6147	6TM-S47	
C11	.0033	600	160-06233	BPD-0033	D6-332	CUB6D33	GP2-333-332	PT6233	6TM-D33	
C12	.0033	600	160-06233	BPD-0033	D6-332	CUB6D33	GP2-333-332	PT6233	6TM-D33	
C13	2.0	50	168-0031	P282Z-2.0		MP2W2				

† Items C6 and R4 are combined in one unit.
♦ Items C7 and R6 are combined in one unit.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SYLVANIA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	2Meg	½	153-0075	ABT-175		Q18-139XX		Volume-Tapped at 150K & 500K
B	Shaft		Not Req.	AK-4		Not Req.		Attach to R1A.
R2A	1Meg	½	153-0076	B-70	A47-1Meg-Z	Q13-137	U-53	Bass
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R2A.
R3A	500KΩ	½	153-0077	B-60	A47-500K-Z	Q13-133	U-48	Treble
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R3A.

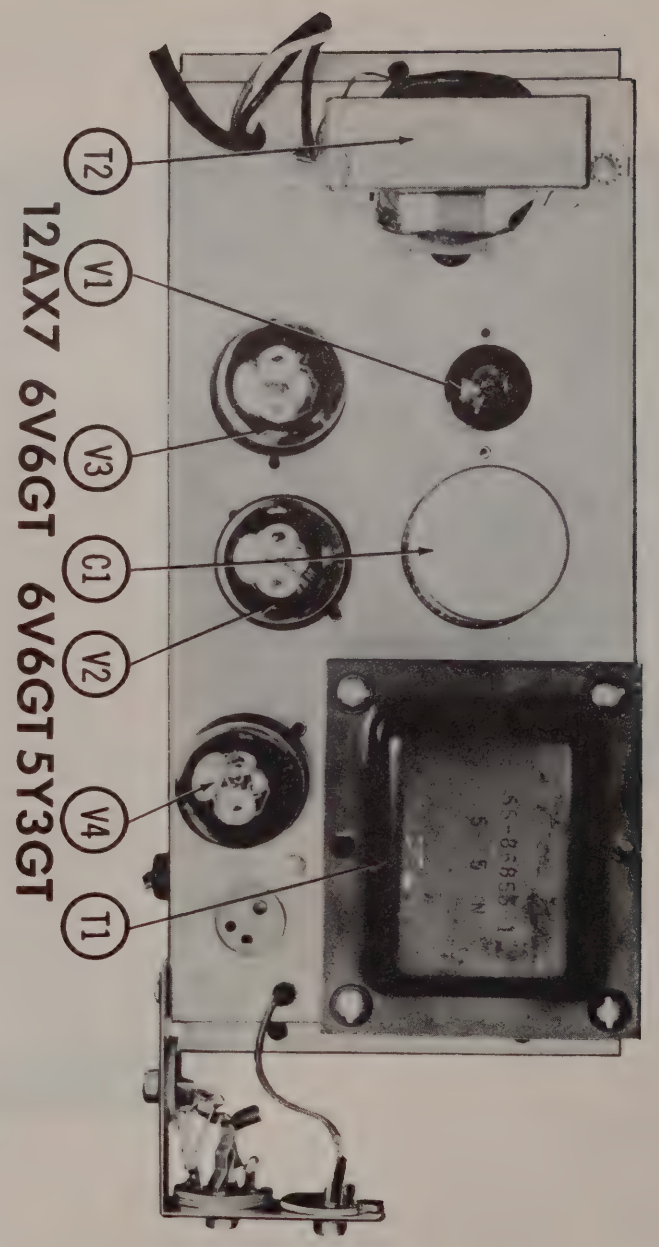
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SYLVANIA PART No.	IRC PART No.	
R4	68KΩ		†190-0025	BTS-68K	
R5	330KΩ		181-0334	BTS-330K	
R6	47KΩ		♦190-0024	BTS-47K	
R7	6.8Meg		181-0685	BTS-6.8Meg	
R8	330KΩ		181-0334	BTS-330K	
R9	1500Ω		181-0152	BTS-1500	
R10	39KΩ		181-0393	BTS-39K	
R11	330KΩ		181-0334	BTS-330K	
R12	390KΩ		181-0394	BTS-390K	
R13	470KΩ		181-0474	BTS-470K	
R14	200Ω	5	187-0031	PW7-200	
R15	100KΩ		181-0104	BTS-100K	
R16	470Ω	1	182-0471	BTA-470	
R17	68Ω	1	182-0680	BTA-68	

† Items R4 and C6 are combined in one unit.
♦ Items R6 and C7 are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	SYLVANIA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC @ .52A	585VCT @ .085A	5VAC @ 2A	6.3VAC @ 1.7A	141-0068	P9209	P3052	PM8405	22R04	R-12B

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	SYLVANIA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	9.1KΩ	3-4Ω	143-0048	Z1007 ①	A-2936①	A-3870	26S59 ②	S-55X	① Drill one new mounting hole. ② Tape 8Ω and 16Ω windings.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	SYLVANIA PART No.	QUAM PART No.	RCA TYPE No.	
SP1	8"	PM	3-4Ω	539-0807	8A21	208S2	① Used in Model 969.
	12"	PM	3-4Ω	539-1206 ①	12A31	226S1	② Tweeter speakers
SP2	4"	PM	10Ω	539-0407 ②	4A1T		
SP3	4"	PM	10Ω	539-0407 ②	4A1T		

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	SYLVANIA PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	916-0005			46-T	0-1 or S-1 and 0-3	

ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

PHONO NEEDLE

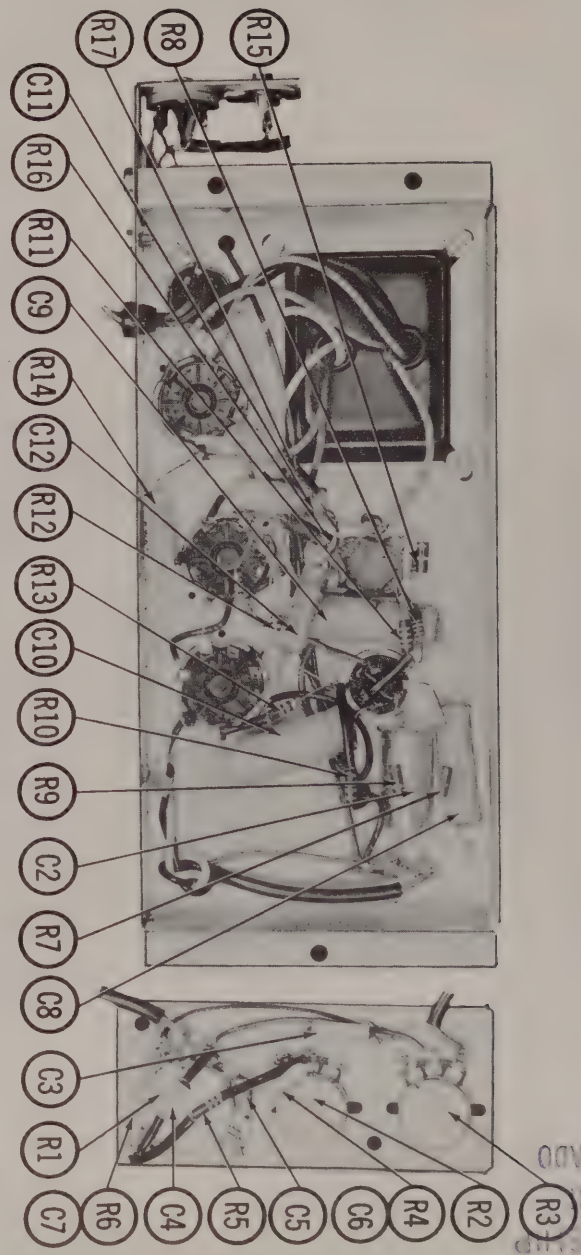
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

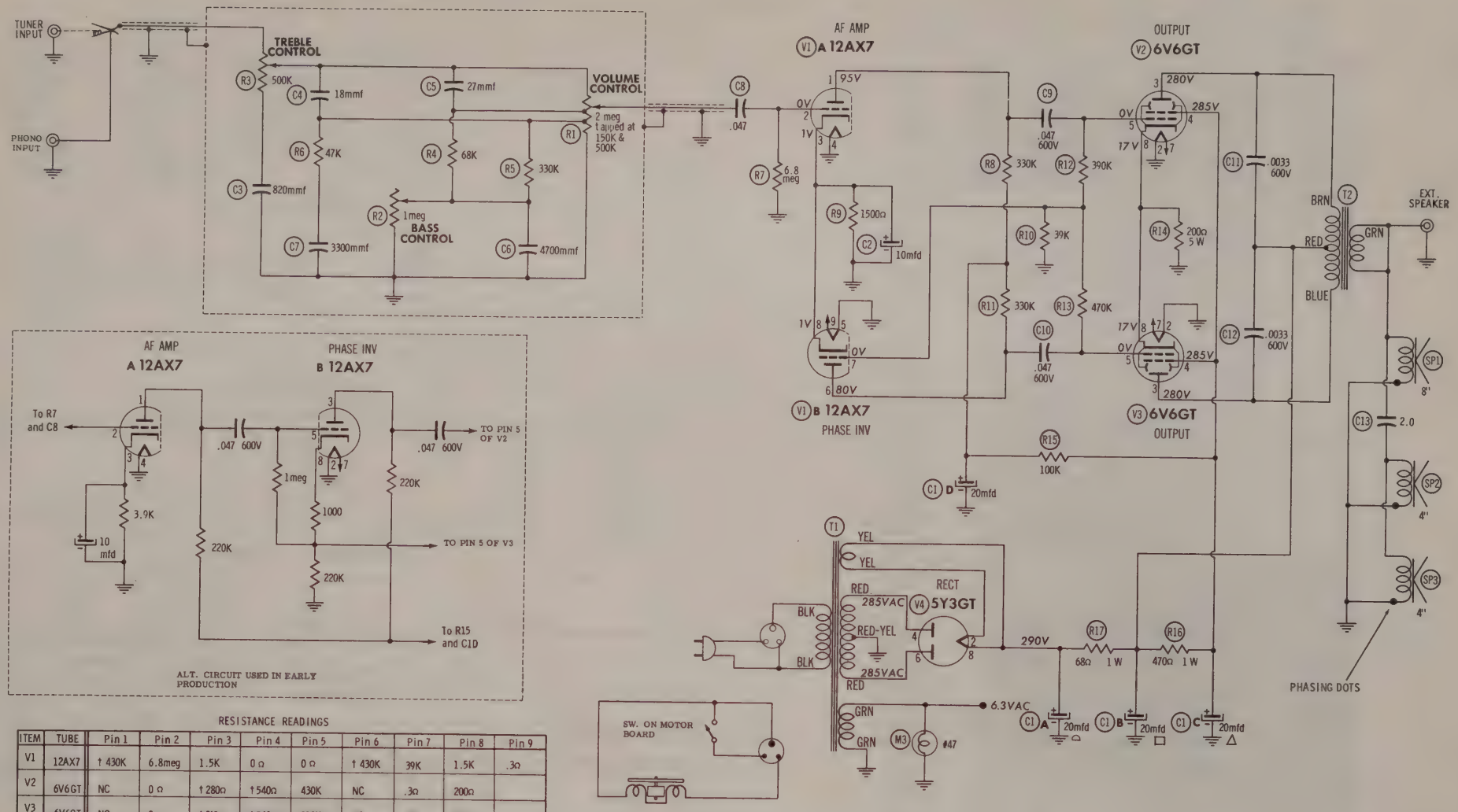
ITEM No.	REPLACEMENT DATA				REMARKS
	SYLVANIA PART No.	JENSEN PART No.	FIDELITONE PART No.	WALCO PART No.	
M2	902-0004 (78RPM Needle)	† CR-55 or ♦ CR-55D	† C-449 or ♦ C-449D	† W-64S or ♦ W-64D	† Jewel ♦ Diamond
	902-0005 (33 1/3-45RPM Needle)	† CR-55LP or ♦ CR-55LPD	† A-448 or ♦ A-448D	† W-64MGS or ♦ W-64MGD	

MISCELLANEOUS

ITEM No.	PART NAME	SYLVANIA PART No.	NOTES
M3	Pilot Light	611-0047	#47
	Knob	740-0100	Control, Model 919
	Knob	740-0101	Control, Model 969
	Knob	954-0006	Reject, On-Off
	Knob	954-0005	Speed Control
	Knob	954-0007	Stylus Control
	Jewel	818-0058	On-Off Indicator, Model 919
	Jewel	818-0055	On-Off Indicator, Model 969

CHASSIS—BOTTOM VIEW





ALT. CIRCUIT USED IN EARLY PRODUCTION

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	† 430K	6.8meg	1.5K	0 Ω	0 Ω	† 430K	39K	1.5K	.3Ω
V2	6V6GT	NC	0 Ω	† 280Ω	† 540Ω	430K	NC	.3Ω	200Ω	
V3	6V6GT	NC	0 Ω	† 310Ω	† 540Ω	510K	NC	.3Ω	200Ω	
V4	5Y3GT	NC	16K	NC	120Ω	NC	130Ω	NC	16K	

† MEASURED FROM PIN 8 OF V4.
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

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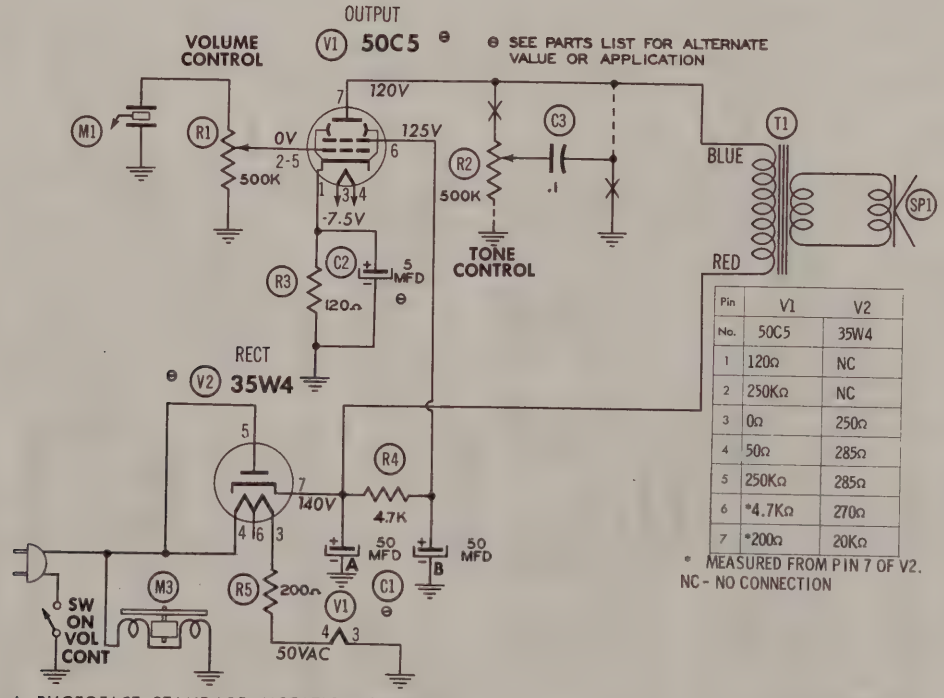
TRUETONE
MODEL D2372

TRADE NAME	Truetone Model D2372
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC Operated Phono Amplifier with 3 Speed Manual Record Player
TUBES (Two)	Types 50C5 (or) 50L6GT Output, 35W4 (or) 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC-60 Cycles RATING .23 Amp. @ 117 Volts AC



Pin No.	V1 50C5	V2 35W4
1	120Ω	NC
2	250KΩ	NC
3	0Ω	250Ω
4	50Ω	285Ω
5	250KΩ	285Ω
6	*4.7KΩ	270Ω
7	*200Ω	20KΩ

* MEASURED FROM PIN 7 OF V2.
NC - NO CONNECTION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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329-15

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	REPLACEMENT DATA		NOTES
		TRUETONE PART No.	STANDARD REPLACEMENT	
V1	Output	50C5	50C5	Some versions may use a 50L6GT.
V2	Rectifier	35W4	35W4	Some versions may use a 35Z5GT.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	TRUETONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	50	150	①	PRS150V5050	BBRD5515	TCD49	TDL-D50-150	FMD-1550	TVA-2453
B	50	150	①						
C2	5	50	②	SRE50V5	BR550	TC30	TD-5-50	FM-1504	TVA-1303

① Some versions use 30MFD for C1B (C1 Part No. CE-5030WA).
② Some versions use 20MFD for C2 (Part No. CE-20WA).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	.1	200	CP05WA	P288-1	DF-104	CUB2P1		PT401	2TM-P1	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	TRUETONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	500KΩ	½	390062	B-60-S	A47-500K-Z	Q13-133	U-48	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A.
C	Switch		Not Req.	Not Req.	SWE-12	76-1	US-26	Attach to R1A.
R2A	500KΩ	½	390117	B-60	A47-500K-Z	Q13-133	U-48	Tone
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	TRUETONE PART No.	IRC PART No.	
R3	120Ω	½	RC15IHWA	BTS-120	
R4	4700Ω	½	RC472HWA	BTS-4700	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	TRUETONE PART No.	IRC PART No.	
R5	200Ω	10	RRW22W10WA	PW10-200	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2.4KΩ	3.7Ω	Part of spkr.	Z1101	A-3025	A-3332	26S58	S-12X	

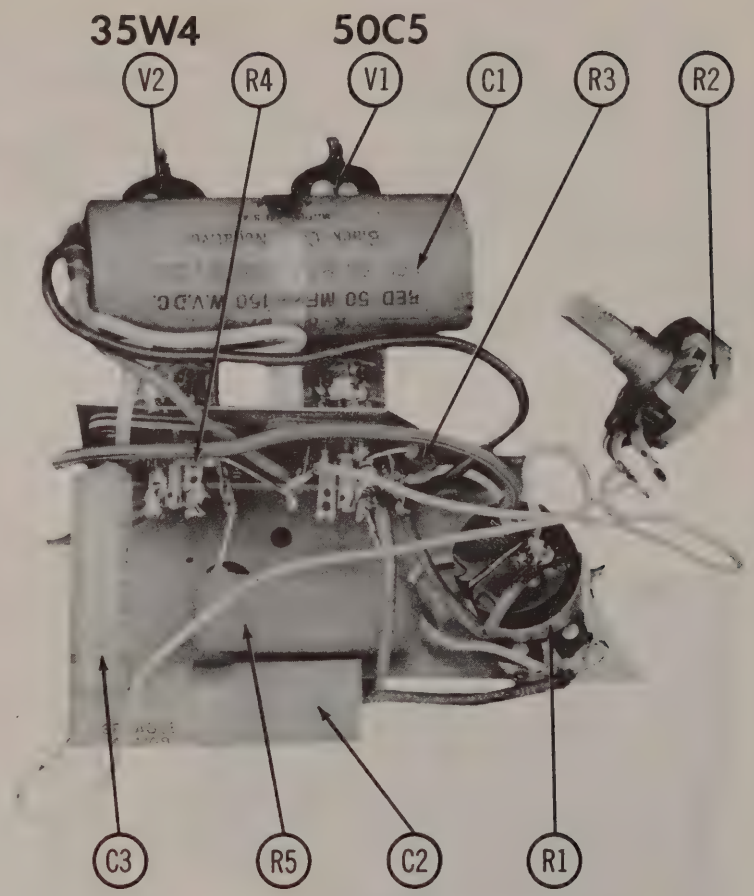
SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	TRUETONE PART No.	QUAM PART No.	RCA TYPE No.	
SP1	4"	PM	3.7Ω	LS4-WA	4A07	223S1	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	TRUETONE PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	F22-1-WA			* 2460		* Complete Tone Arm and Cartridge Assembly

CHASSIS—BOTTOM VIEW



PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA				REMARKS
	TRUETONE PART No.	JENSEN PART No.	FIDELITONE PART No.	WALCO PART No.	
M2	N-1-3-WA (Above part no. includes a 1 mil and a 3 mil osmium needle)	* W-44 or * WE-44 and * W-44LP or * WE-44LP	* A-432 and * C-433	* W-26A and * W-26MGA	* Metal

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M3	Phono Motor	PM3-WA	3-Speed-Includes Turntable
	Cabinet	CB308-WA	Includes Motor Board
	Knob	KNVP-WA	On-Off-Volume
	Knob	KNBTC-WA	Bass-Treble

WEBCOR MODEL 1691

WEBCOR MODEL 1691

WEBCOR MODEL 1691

TRADE NAME	Webcor Model 1691
MANUFACTURER	Webster-Chicago, 5610 Bloomingdale Ave., Chicago 39, Illinois
TYPE SET	AC Operated AM Superheterodyne Receiver with 3 Speed Automatic Record Changer
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540KC - 1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE WEBCOR MODEL 141 - PHOTOFACT SET 321 - FOLDER 13.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

WEBCOR MODEL 1691

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det.-AVC-AF Amplifier	12AV6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA WEBCOR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	40	150	30P218		BBRQ44315C	WQ230	CDBQ1001		R2199 *
B	40	150							
C	20	150							
D	20	25							

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA WEBCOR PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	.05	200	30P196	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C3	.05	200	30P196	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C4	100		30P180	SI100	D6-101	TP34	GP1K-101	UC-531	5GA-T1	
C5	5000		30P203	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C6A	5000		†62P003	†PA-112-2	†PC-71	†112TM2	†1406-02		†T-4	
B	250									
C										
C7	5000		30P203	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C8	.01	400	30P041	BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C9	.05	200	30P196	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C10	.05	400	30P042	BPD-05	DF-503	CUB4S5		PT415	4TM-S5	
C11	.05	200	30P196	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	

† Items C6A, C6B, C6C, R8A and R8B are combined in one unit. When replacing items separately, C6B and C6C should total 250MMF.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA WEBCOR PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	1Meg		N9959					Volume & Switch (Note 1)
R2	500K		N9958					Tone & Radio-phono switch (Note 2)

Note 1. Some versions use alternate control part #31P094 in this application.
Note 2. Some versions use alternate control part #31P093 in this application.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA WEBCOR PART No.	IRC PART No.	NOTES
R3	22K		29S2232	BTS-22K	
R4	2.2Meg		29S2252	BTS-2.2Meg	
R5	150Ω		29S1512	BTS-150	
R6	6.8Meg		29S6852	BTS-6.8Meg	
R7	47Ω		29M4702	BTS-47	
R8A	250K		†62P003	BTS-220K	
B	500K			BTS-470K	

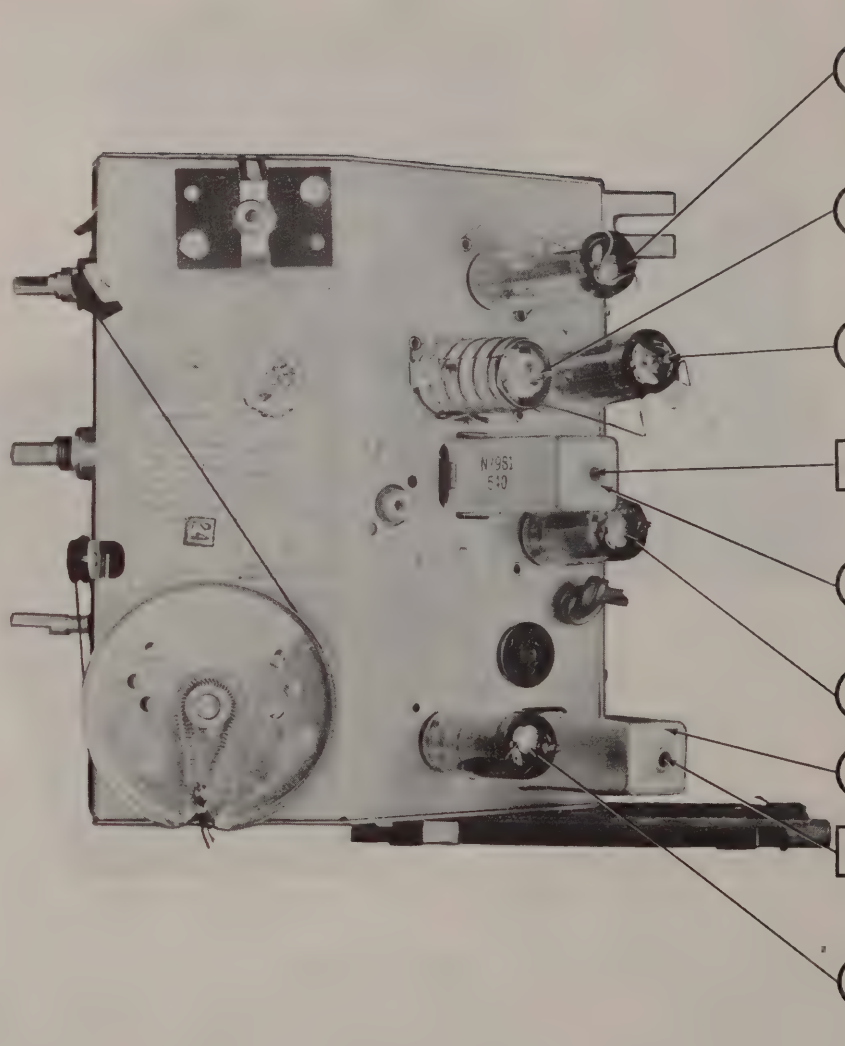
ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA WEBCOR PART No.	IRC PART No.	NOTES
R9	820Ω	1	29M8213	BTA-820	
R10	150Ω		29M1512	BTS-150	
R11	150Ω		29M1512	BTS-150	
R12	22Ω		29M2202	BTS-22	
R13	1Meg		29S1052	BTS-1Meg	

† Items R8A, R8B, C6A, C6B, C6C are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA WEBCOR PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2.5KΩ	3-4Ω	67P040	Z1103	A-3031	A-3336	24S50A	S-16X	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	WEBCOR PART No.	QUAM PART No.	RCA TYPE No.	
SP1	5"	PM	3-4Ω	76P011	5A07	205S2	

COILS (RF-IF)

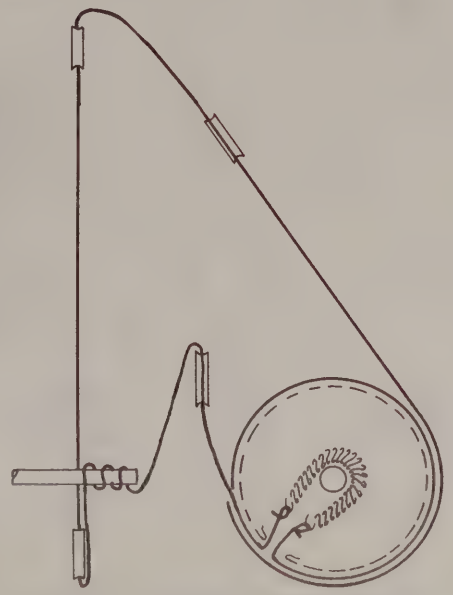
ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	WEBCOR PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Stick	.5Ω		65P107				
L2	Osc. Coil	.7Ω	7.5Ω	65P108	14-1073		69-OSC	
L3	Input IF	16Ω	16Ω	69P007	16-6758	BC-352	12-C1	
L4	Output IF	16Ω	16Ω	69P007	16-6758	BC-353	12-C2	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA				REMARKS
	WEBCOR PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1				76		

MISCELLANEOUS

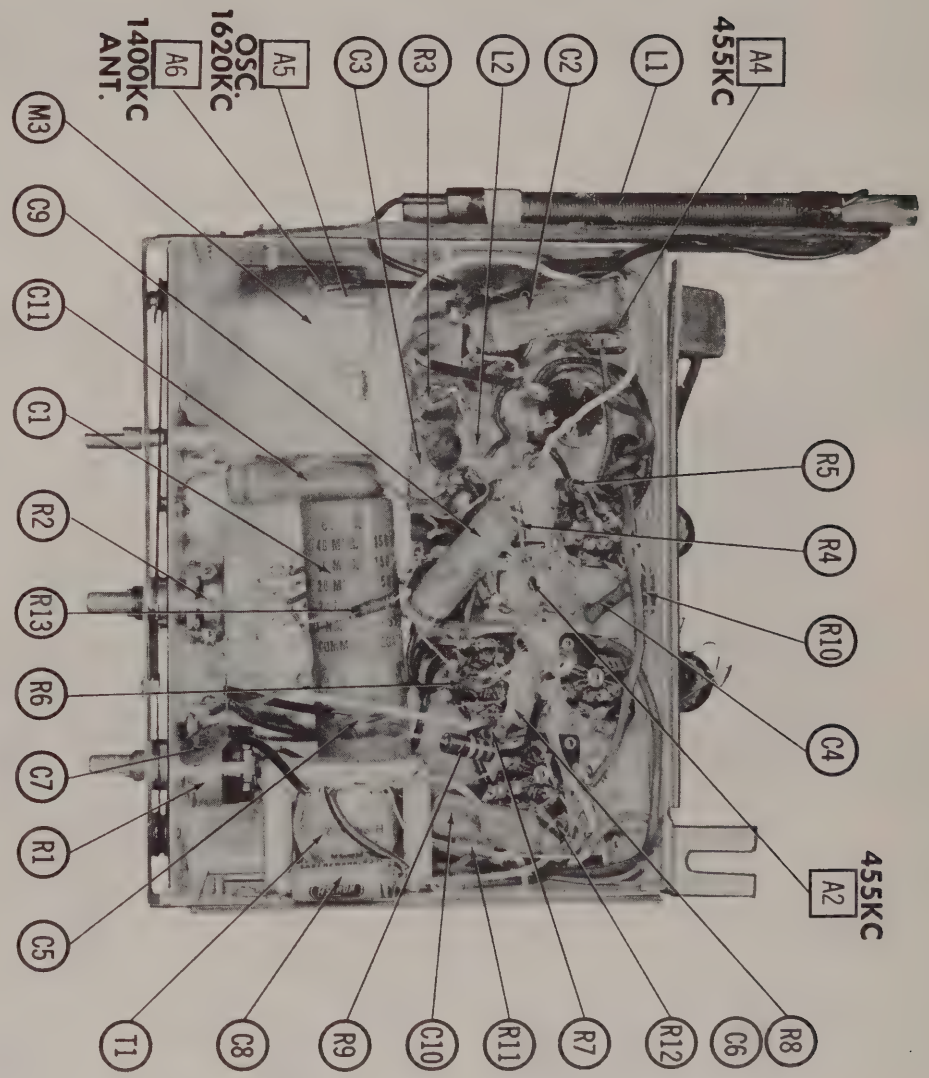
ITEM No.	PART NAME	WEBCOR PART No.	NOTES
M2	Dial Light		#47
M3	Tuning Cap.	30P217	2 Gang (19-295MMF, 18-120MMF)
	Case	80X132-1	
	Handle	39P049-3	
	Knob	39P142-5LS	Tone & Radio-Phono switch
	Knob	39P142-4LS	On-off-volume
	Knob	39P142-6LS	Tuning
	Dial Scale	77P003	
	Dial Pointer	45P1921	



TUNING GANG FULLY CLOSED

DIAL CORD STRINGING

CHASSIS—BOTTOM VIEW



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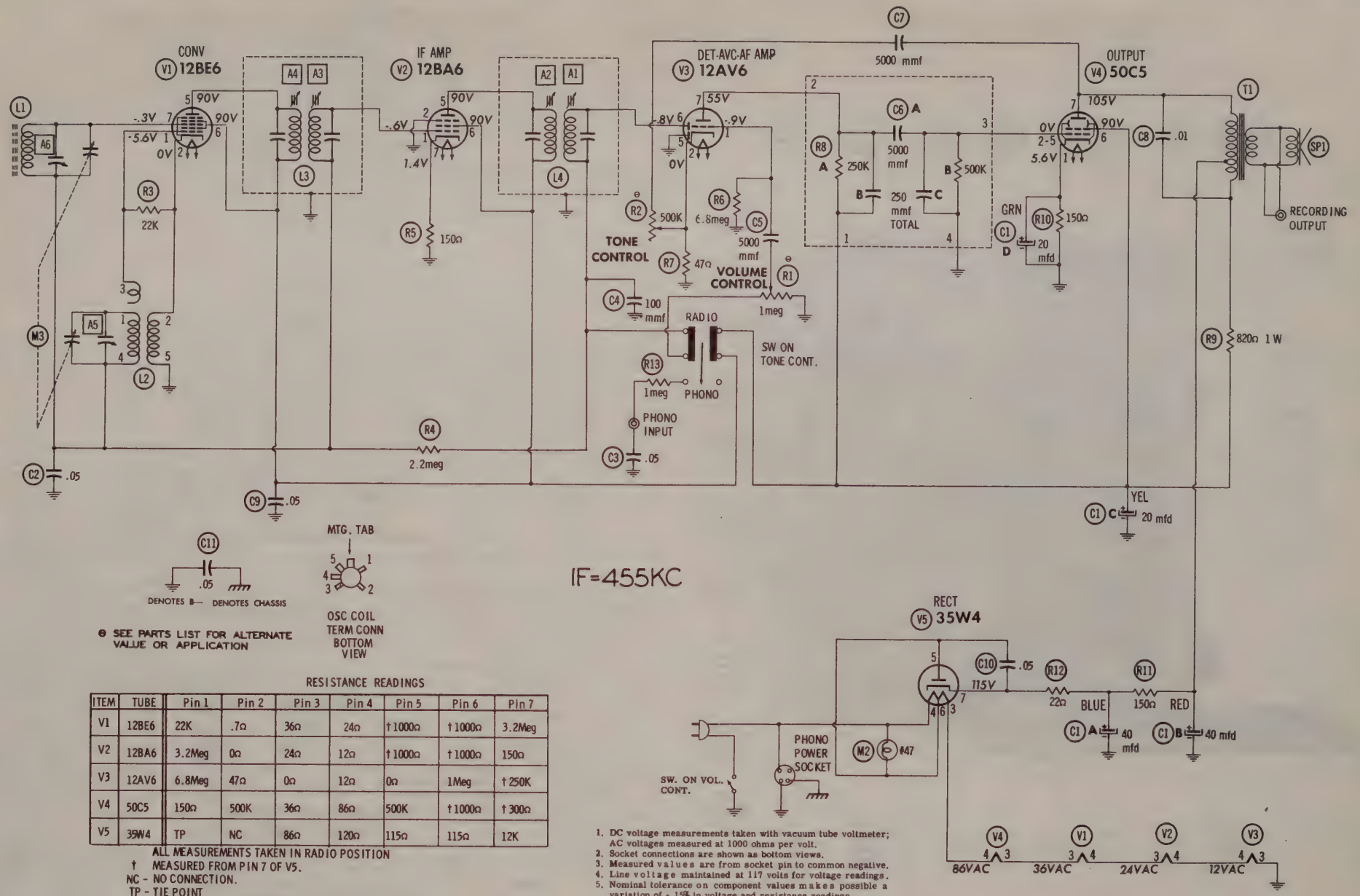
WEBCOR MODEL 1691



⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	.7Ω	36Ω	24Ω	†1000Ω	†1000Ω	3.2Meg
V2	12BA6	3.2Meg	0Ω	24Ω	12Ω	†1000Ω	†1000Ω	150Ω
V3	12AV6	6.8Meg	47Ω	0Ω	12Ω	0Ω	1Meg	†250K
V4	50C5	150Ω	500K	36Ω	86Ω	500K	†1000Ω	†300Ω
V5	35W4	TP	NC	86Ω	120Ω	115Ω	115Ω	12K

ALL MEASUREMENTS TAKEN IN RADIO POSITION
† MEASURED FROM PIN 7 OF V5.
NC - NO CONNECTION.
TP - TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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ZENITH
MODELS HFY17E, R (Ch. 3Y02)

ZENITH
MODELS HFY17E, R (Ch. 3Y02)

TRADE NAME	Zenith Models HFY17E, HFY17R (Ch. 3Y02)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Ill.
TYPE SET	AC Operated Phono Amplifier with 4 Speed Automatic Record Changer
TUBES (Three)	Types 12AU7 AF Amplifier, 6V6GT Output, 6X5GT Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING .58 Amp. @ 117 Volts AC

ZENITH RECORD CHANGER MODEL S-14067

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

ZENITH
MODEL HFY17E (Ch. 3Y02)

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amplifier	12AU7	
V2	Output	6V6GT	

ITEM No.	USE	TYPE	NOTES
V3	Rectifier	6X5GT	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲40	350	22-2707	AFH3-43-50	C155	FP376.9	TMT-39	T-110	TVL-3786
B	■40	350							
C	▲20	350							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	.1	600	22-417	P688-1	DF-104	CUB6P1		PT601	6TM-P1	
C3	470		22-6	BPD-00047	DD-471	K060	831-471	UC-5347	5GA-T47	
C4	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C5	.2	200	22-1531	P288N-22		CUB2P22		PT402	2TM-P22	
C6	.03	600	22-174	BPD-03	DF-303	CUB6S3		PT613	6TM-S3	
C7	.01	600	22-669	BPD-01	DD-103	CUB6S1	GP3-333-103	PT611	6TM-S1	
C8	.003	600	22-288	S13000	D6-302	CUB6D3	GP2-333-302	PT623	6TM-D3	
C9	1000		22-17	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C10	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	3Meg	½	63-3586				UE3250	Bass (Panel)
B	250K	½						Treble (Rear)
R2	1.5Meg	½	63-3587				UT-449	Volume

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R3	10Meg		63-1954	BTS-10Meg	
R4	68K		63-1863	BTS-68K	
R5	1800Ω		63-1796	BTS-1800	
R6	47K		63-1855	BTS-47K	
R7	120K		63-1873	BTS-120K	
R8	3900Ω		63-1810	BTS-3900	
R9	2200Ω		63-1799	BTS-2200	
R10	68K		63-1863	BTS-68K	

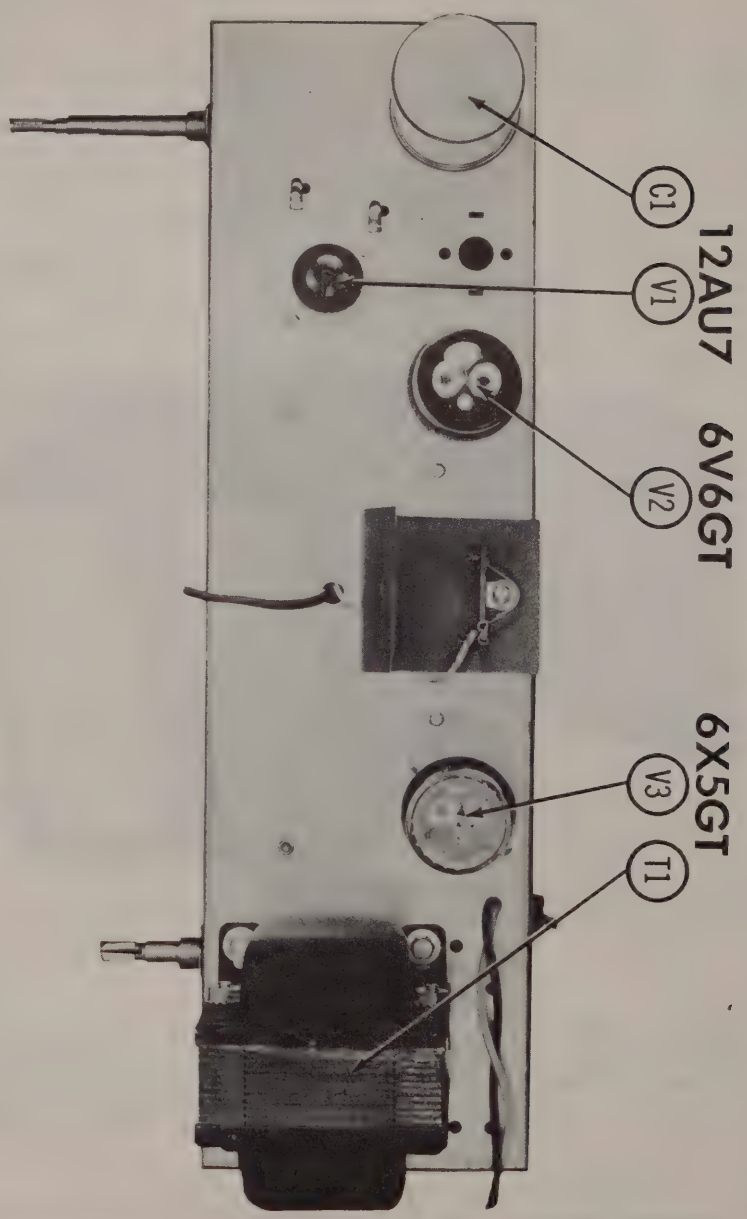
ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R11	1000Ω		63-1785	BTS-1000	
R12	470K		63-1898	BTS-470K	
R13	22K			BTS-22K	
R14	180Ω	1	63-2387	BTA-180	
R15	100K		63-1870	BTS-100K	
R16	5600Ω	1	63-3207	BTA-5600	
R17	220Ω	1	63-3206	BTA-220	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ZENITH PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC @ .31A	515VCT @ .057A	6.3VAC @ 1.3A		95-1392	P9204 ②	P-3148 ①	PC-8420 ①	26R31U	R-10A ① ②

① Drill new mounting holes.
② Tape 5V winding.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	ZENITH PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	8KΩ	3-4Ω	95-1453	Z1011	A-2901 ①	A-3849 ①		S-9X	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	QUAM PART No.	RCA TYPE No.	
SP1	7½"	PM	3-4Ω	49-785	8A31	225S1	① Electrostatic Speakers.
SP2				S-23829 ①			
SP3				S-23829 ①			

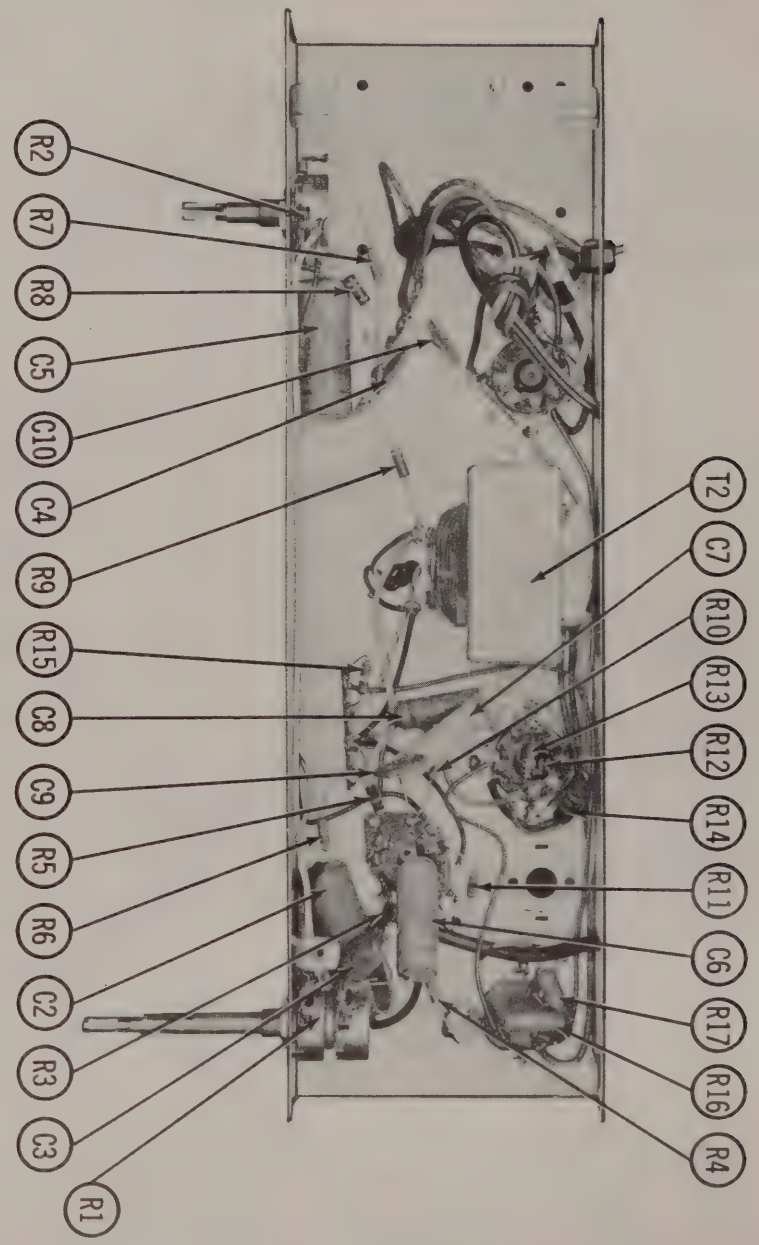
PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	ZENITH PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	142-77					

MISCELLANEOUS

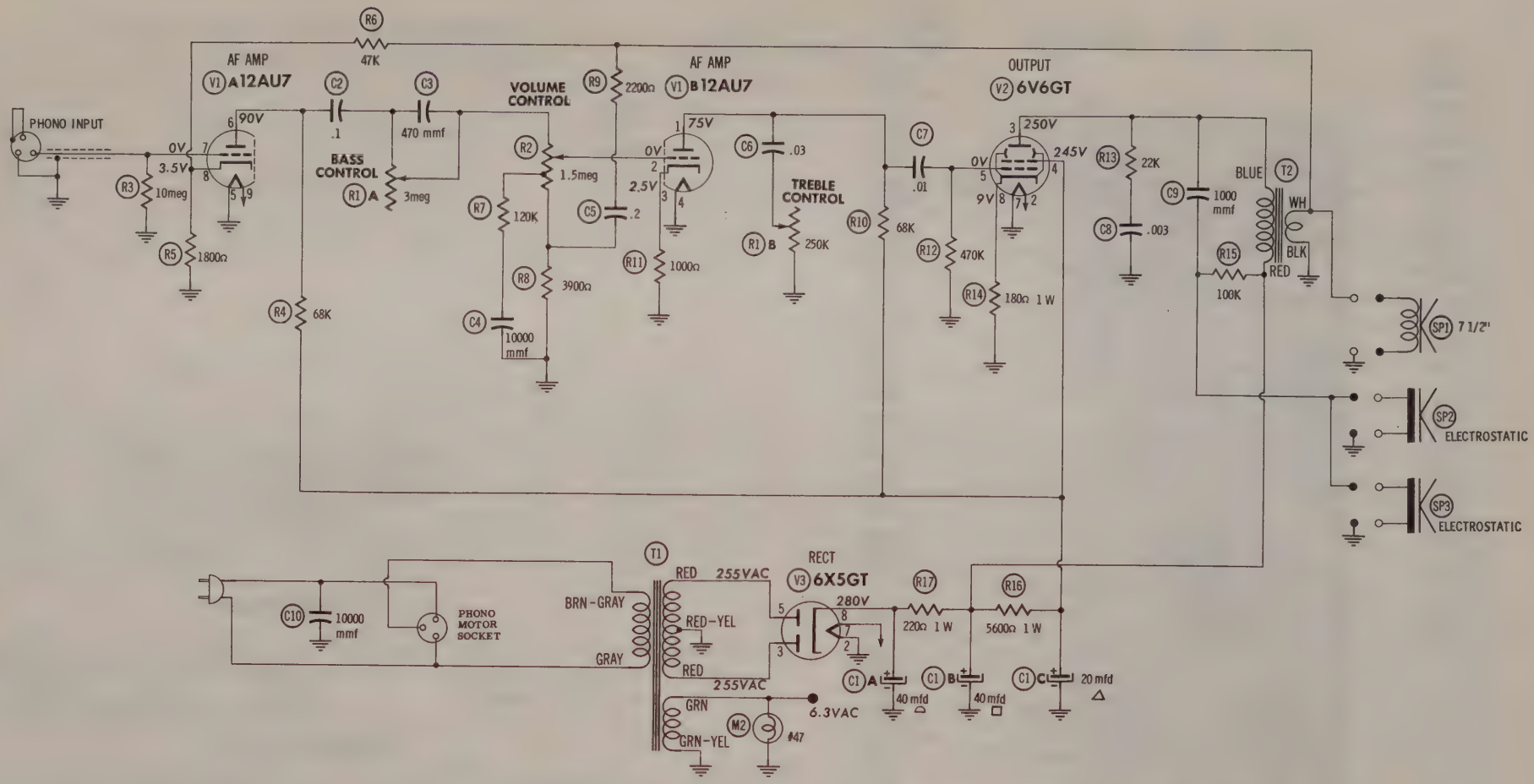
ITEM No.	PART NAME	ZENITH PART No.	NOTES
M2	Pilot Light	100-67	#47
	Cabinet	14-1941E	Model HFY17E
	Cabinet	14-1941R	Model HFY17R
	Knob	46-1300	Tone & Dummy, Model HFY17R
	Knob	46-1301	Tone & Dummy, Model HFY17E
	Knob	46-1317	Volume & Tone, Model HFY17R
	Knob	46-1318	Volume & Tone, Model HFY17E

CHASSIS—BOTTOM VIEW



PROPERTY OF
F. E. DUNGENSHIP
3939 KALAMATH ST.
DENVER, COLORADO

ZENITH
MODEL HFY17E (Ch. 3Y02)



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AU7	†74K	3900Ω	1000Ω	0Ω	0Ω	†74K	10meg	1600Ω	.1Ω
V2	6V6GT	NC	.1Ω	†1100Ω	†5800Ω	470K	TP	0Ω	180Ω	
V3	6X5GT	NC	0Ω	140Ω	TP	150Ω	TP	.1Ω	13K	

† MEASURED FROM PIN 8 OF V3.
TP TIE POINT.
NC NO CONNECTION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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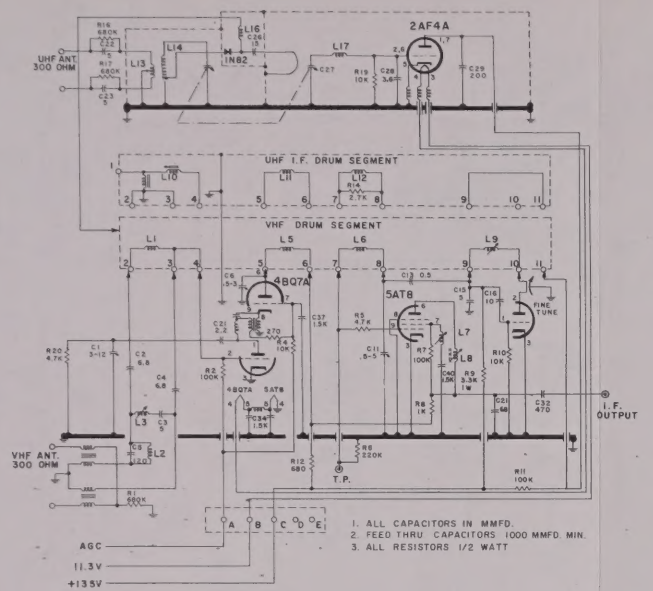

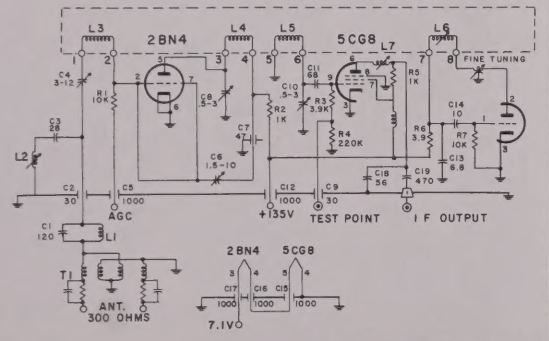

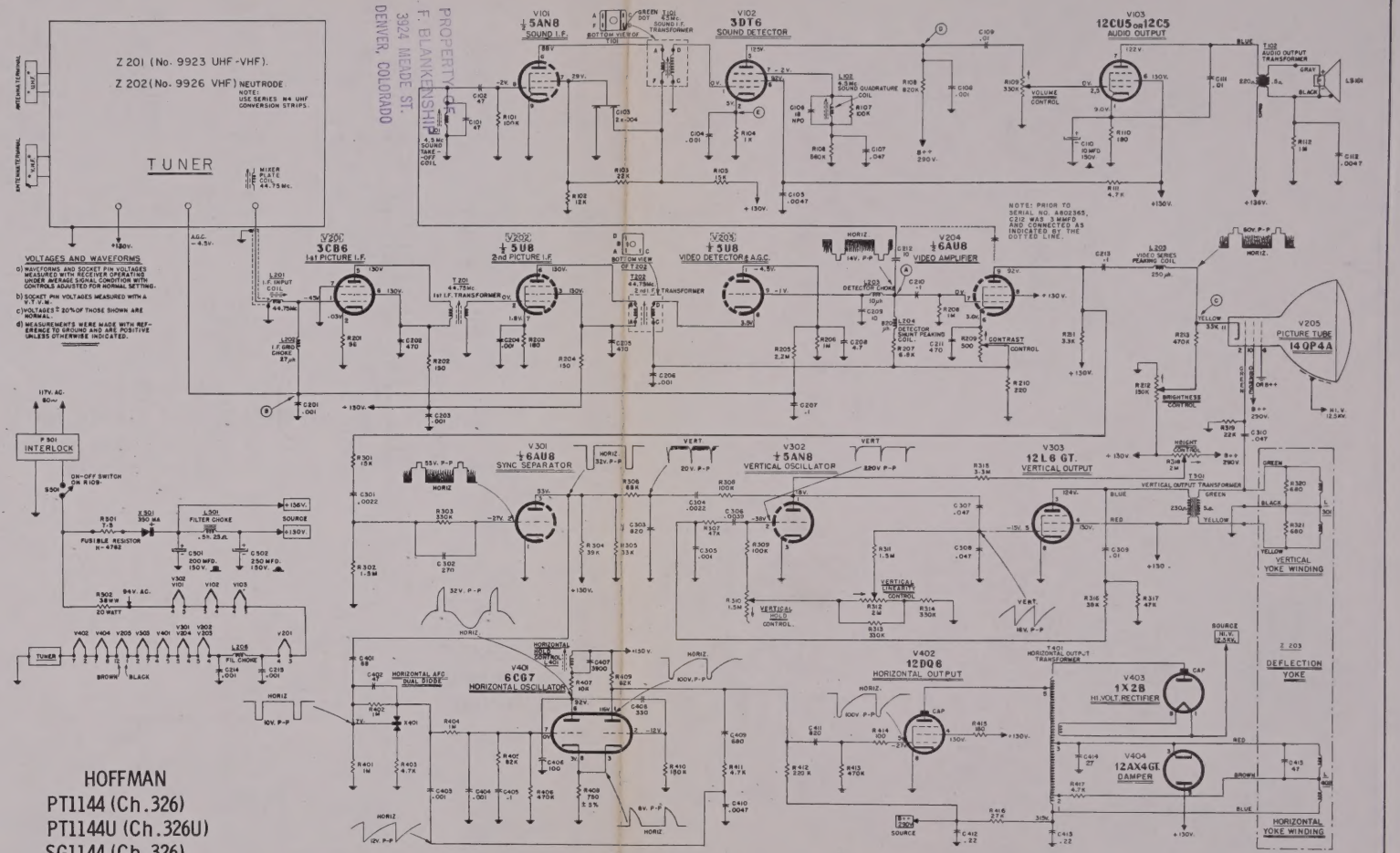
Z 201 (No. 9923 UHF-VHF).
Z 202 (No. 9926 VHF) NEUTRODE
NOTE: USE SERIES N4 UHF CONVERSION STRIPS.
TUNER
PROPERTY OF L. F. BLANKENSHIP 3324 MEADE ST. DENVER, COLORADO
VOLTAGES AND WAVEFORMS
V101 5AN8 SOUND I.F.
V102 3DT6 SOUND DETECTOR
V103 12CU5 or 12C5 AUDIO OUTPUT
V201 3CB6 1st PICTURE I.F.
V202 5U8 2nd PICTURE I.F.
V203 5U8 VIDEO DETECTOR & A.G.C.
V204 6AU8 VIDEO AMPLIFIER
V205 PICTURE TUBE 14 QP4A
V301 6AU8 SYNC SEPARATOR
V302 5AN8 VERTICAL OSCILLATOR
V303 12L6 GT. VERTICAL OUTPUT
V401 12DQ6 HORIZONTAL OUTPUT
V402 6CG7 HORIZONTAL OSCILLATOR
V403 1X2B HI VOLT. RECTIFIER
V404 12AX4GT DAMPER
P 501 INTERLOCK
ON-OFF SWITCH ON R 109
FUSIBLE RESISTOR N-4782
FILTER CHOKE
DEFLECTION YOKE
VERTICAL YOKE WINDING
HORIZONTAL YOKE WINDING
VERTICAL OUTPUT TRANSFORMER
HORIZONTAL OUTPUT TRANSFORMER
AUDIO OUTPUT TRANSFORMER
VOLUME CONTROL
CONTRAST CONTROL
BRIGHTNESS CONTROL
VERTICAL HOLD CONTROL
VERTICAL LINEARITY CONTROL
HORIZONTAL HOLD CONTROL
HORIZONTAL AFC DUAL DIODE
HORIZONTAL OSCILLATOR
HORIZONTAL OUTPUT
NOTE: PRIOR TO SERIAL NO. 6802365, C212 WAS 3 MMFD AND CONNECTED AS INDICATED BY THE DOTTED LINE.

HOFFMAN
PT1144 (Ch.326)
PT1144U (Ch.326U)
SG1144 (Ch.326)
SG1144U (Ch.326U)

SCHEMATIC COURTESY OF HOFFMAN RADIO

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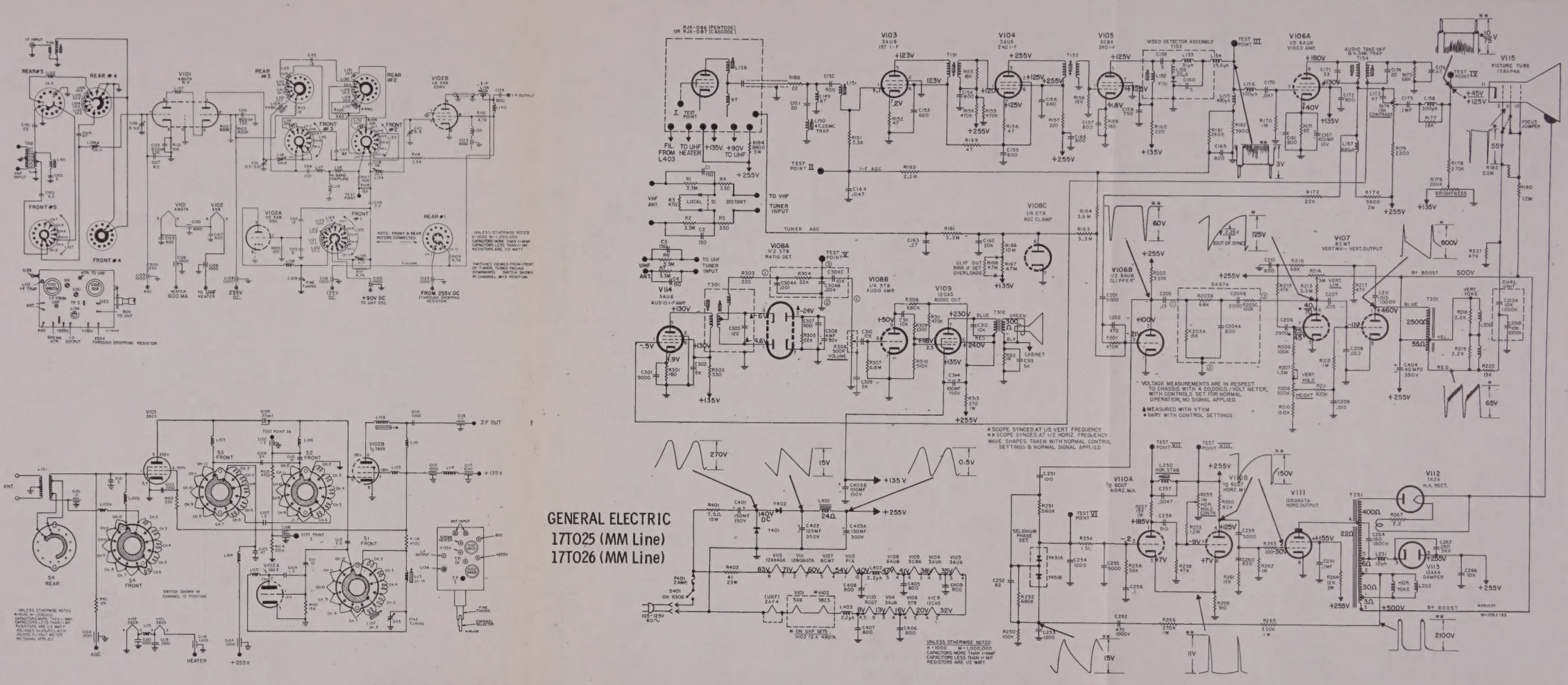

GENERAL ELECTRIC
17T025 (MM Line)
17T026 (MM Line)

SCHEMATIC COURTESY OF GENERAL ELECTRIC COMPANY